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February 5, 2014

Mr. Kenneth Bardo - LU-9J
U.S. EPA Region V
Corrective Action Section
77 West Jackson Boulevard
Chicago, IL 60604-3507

Re: Long-Term Monitoring Program
4th Quarter 2013 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

Dear Mr. Bardo:

Enclosed please find the Long-Term Monitoring Program 4th Quarter 2013 Data Report for Solutia Inc.'s W. G. Krummrich Plant, Sauget, IL. Results from supplemental piezometers GWE-3D, 5S, and 5M and wells GWE-5D and ESL-MW-A, C1, and D1 are included in this report. The scope of monitoring after the February 2014 event will depend on US EPA's response to the "2014 Periodic Technical Review (Evaluation of 3Q08 - 3Q13 Data)" that Solutia submitted on January 13, 2014.

If you have any questions or comments regarding this report, please contact me at (314) 674-3312 or gmrina@eastman.com

Sincerely,

Gerald M. Rinaldi
Manager, Remediation Services

Enclosure

cc: Distribution List

DISTRIBUTION LIST

Long-Term Monitoring Program
4th Quarter 2013 Data Report
Solutia Inc., W. G. Krummrich Plant, Sauget, IL

USEPA

Stephanie Linebaugh
USEPA Region 5 - SR6J, 77 West Jackson Boulevard, Chicago, IL 60604

Solutia

Donn Haines 500 Monsanto Avenue, Sauget, IL 62206-1198

4TH QUARTER 2013
DATA REPORT

LONG-TERM MONITORING PROGRAM

SOLUTIA INC.
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

Prepared for

Solutia Inc.
575 Maryville Centre Drive
St. Louis, Missouri 63141

January 2014

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St. Louis, MO 63110
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Project: 21562962.00001

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1.0 INTRODUCTION

This report presents the results of the 4th Quarter 2013 (4Q13) sampling event performed at the Solutia Inc. (Solutia) W.G. Krummrich (WGK) Facility located in Sauget, Illinois (Site). This sampling event was conducted in accordance with the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009). The Site location is presented in **Figure 1**.

The LTMP was designed to evaluate the effectiveness of monitored natural attenuation (MNA), including: 1) a clear and meaningful trend of decreasing contaminant mass; 2) data that indirectly demonstrate the types and rates of natural attenuation processes active at the site; and 3) data that directly demonstrate the occurrence of biodegradation processes at the site.

Groundwater Sampling Location and Frequency – As specified in the Revised LTMP Work Plan, groundwater samples were collected from five monitoring wells downgradient of the Former Chlorobenzene Process Area (CPA-MW-1D through CPA-MW-5D) and five monitoring wells downgradient of the Former Benzene Storage Area (BSA-MW-1S and BSA-MW-2D through BSA-MW-5D) to assess attenuation processes in the American Bottoms aquifer, as impacted groundwater from these source areas migrates toward and discharges to the Mississippi River. Additionally, at the request of USEPA, Groundwater samples were also collected from monitoring well GWE-5D and piezometers GWE-3D, GWE-5S, and GWE-5M along with East St. Louis (ESL) monitoring wells ESL-MW-A, ESL-MW-C1, and ESL-MW-D1, all located approximately 1.0 - 1.5 miles north of WGK.

Monitoring wells CPA-MW-1D, 2D, 3D, 4D and 5D are located within the limiting flow lines downgradient of the Former Chlorobenzene Process Area. Monitoring wells BSA-MW-1S, 2D, 3D, 4D and 5D are located within the limiting flow lines downgradient of the Former Benzene Storage Area. Source areas and monitoring well locations are presented in **Figure 2**.

Groundwater Sampling Parameters – During the 4Q13 groundwater sampling event, groundwater samples from the seventeen monitoring wells described above were analyzed (via USEPA Method 8260B) for benzene, chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4-dichlorobenzene to demonstrate a trend of decreasing contaminant mass and/or concentrations over time. In accordance with USEPA comments regarding the Long-Term Monitoring Plan, the following constituents are included in the groundwater monitoring parameter list on a semi-annual basis (1st and 3rd Quarters):

- 4-Chloroaniline: CPA-MW-3D, CPA-MW-4D and CPA-MW-5D
- 2-Chlorophenol: All BSA and CPA series wells
- 1, 2, 4-Trichlorobenzene: All BSA and CPA series wells
- 1,4-Dioxane: BSA-MW-2D, BSA-MW-3D, BSA-MW-4D and BSA-MW-5D

Samples for analysis of MNA parameters were collected from seventeen monitoring wells. Evaluation of the types of active natural attenuation processes at the site is based on the following key geochemical parameters:

- Electron Donors: Organic Carbon (Total and Dissolved)
- Electron Acceptors: Iron (Total and Dissolved)
  Manganese (Total and Dissolved)
  Nitrate
  Sulfate
- Biodegradation Byproducts: Carbon Dioxide
  Chloride
  Methane
- Biodegradation Indicators: Alkalinity

Direct demonstration of the occurrence of biodegradation processes is completed quarterly utilizing Microbial Insights (www.microbe.com) Bio-Trap® samplers for Phospholipid Fatty Acid (PLFA) Analysis, along with Bio-Trap® samplers baited with benzene or chlorobenzene for Stable Isotope Probing (SIP) analysis.

2.0 FIELD PROCEDURES

URS Corporation (URS) conducted 4Q13 LTMP field activities on October 30-31 and November 4-8, 2013. Activities were completed in accordance with procedures outlined in the Revised LTMP Work Plan, including the collection of appropriate quality assurance and quality control (QA/QC) samples. The following section summarizes field investigative procedures:

Groundwater Level Measurements – URS personnel used an electronic oil/water interface probe to measure depth to static groundwater levels and the thickness of non-aqueous phase liquid if (NAPL) if present. Depth to groundwater measurements were collected on October 30 and 31, 2013 from accessible existing wells (i.e., BSA-, CPA-, ESL- GM-, GWE-, K-, PS-MW-, and PMA-series) and piezometer clusters (installed for the Sauget Area 2 RI/FS and WGK CA-750 Environmental Indicator projects) specified in the Revised LTMP Work Plan (**Figure 3**). NAPL was not detected within any of the monitoring wells or piezometers gauged in 4Q13.

Well gauging information for the 4Q13 event is presented in **Table 1**. As the middle and deep hydrogeologic units are the primary migration pathway for constituents present in groundwater at the WGK Facility, a groundwater potentiometric surface map based on water level data from wells screened in the Middle Hydrogeologic Unit (MHU) and Deep Hydrogeologic Unit (DHU) is presented as **Figure 3**.

Groundwater Sampling - Low-flow sampling techniques were used for groundwater sample collection. At each monitoring well, disposable, low-density polyethylene tubing was attached to a submersible pump or peristaltic pump (GWE-3D), which was then lowered into the well to the middle of the screened interval. Monitoring wells were purged at a rate of approximately 200 to 400 mL/minute to minimize drawdown. If significant drawdown occurred, flow rates were reduced.

Drawdown was measured periodically throughout purging to ensure that it did not exceed 25% of the distance between the pump intake and the top of the screen. Once the flow rate and drawdown were stable, field measurements were collected approximately every two to four minutes. Purging of a well was considered complete when the following water quality parameters remained stable over three consecutive flow-through cell volumes:

Parameter	Stabilization Guidelines
Dissolved Oxygen (DO)	+/- 10% or +/-0.2 mg/L, whichever is greatest
Oxidation-Reduction Potential (ORP)	+/- 20 mV
pH	+/- 0.2 units
Specific Conductivity	+/- 3%

Sampling commenced upon completion of purging. Prior to sample collection, the flow-through cell was bypassed to allow for collection of uncompromised groundwater. Samples were collected at a flow rate less than or equal to the rate at which stabilization was achieved. Sample containers were filled based on laboratory analysis to be performed, in the following order:

- Volatile Organic Compounds (VOCs)
- Gas Sensitive Parameters (e.g., methane, carbon dioxide)
- General Chemistry (e.g., alkalinity, chloride, total and dissolved iron, total and dissolved manganese, nitrate, sulfate, total and dissolved organic carbon, and ferrous iron)

Samples collected for ferrous iron, dissolved iron, dissolved manganese, and dissolved organic carbon analysis were filtered in the field using in-line 0.2 micron disposable filters, represented by a notation of “F (0.2)” in the sample nomenclature.

Quality assurance/quality control (QA/QC) samples consisting of analytical duplicates (AD) and equipment blanks (EB) were collected at a rate of 10% and matrix spike/matrix spike duplicates (MS/MSD) were collected at a rate of 5%. In addition, trip blanks accompanied each shipment containing samples for VOC analysis.

Each investigative or QA/QC sample was labeled immediately following collection. Each sample identification number consisted of the following nomenclature "AAA-MW#-MMYY-QAC" where:

- "**AAA**" denotes "Benzene Storage Area (BSA)", "Chlorobenzene Process Area (CPA)", "East St. Louis (ESL)", or "Groundwater Evaluation (GWE)" and "**MW-#**" denotes "Monitoring Well Number":
- **"MMYY" –** Month and year of sampling quarter, e.g.: November (4th quarter), 2013 (1113)
- **"QAC"** denotes QA/QC sample
  - **AD –** Analytical Duplicate
  - **EB –** Equipment Blank
  - **MS** or **MSD –** Matrix Spike or Matrix Spike Duplicate

Upon collection and labeling, sample containers were immediately placed inside an iced cooler, packed in such a way as to help prevent breakage and maintain inside temperature at or below approximately 4^{o}C. Field personnel recorded the project identification and number, sample description/location, required analysis, date and time of sample collection, type and matrix of sample, number of sample containers, preservative used (if applicable), analysis requested/comments, and sampler signature/date/time, with permanent ink on a chain-of-custody (COC). Coolers were sealed between the lid and sides with a custody seal, and then shipped to TestAmerica in Savannah, Georgia by means of an overnight delivery service. Sampling data forms are included in **Appendix A**, while copies of COCs are included in **Appendix B**.

Field personnel and equipment were decontaminated according to procedures specified in the Revised LTMP Work Plan to ensure the health and safety of those present, maintain sample integrity, and minimize movement of contamination between the work area and off-site locations. Equipment used on-site was decontaminated prior to beginning work, between sampling locations and/or uses, and prior to demobilizing from the site. Non-disposable purging and sampling equipment was decontaminated between each sample acquisition by washing with an Alconox® or equivalent detergent wash, a potable water rinse, and a distilled water rinse. Personnel and small equipment decontamination was performed at the sample locations. Disposable sampling equipment, such as gloves were collected and bagged on a daily basis and managed in accordance with Solutia procedures. Purge water was containerized and handled per Solutia procedures.

Biodegradation Evaluation Sampling - Bio-Trap® samplers and Bio-Trap® samplers baited with benzene or chlorobenzene, provided by Microbial Insights, Inc. (Rockford, TN), were

utilized in the LTMP wells (except GWE-5 cluster, ESL wells, and GWE-3D) to provide information regarding biodegradation potential of the Shallow Hydrogeologic Unit (SHU), the MHU and the DHU. Bio-Trap® samplers are passive sampling tools which, over time, collect microbes across a membrane that serves as the sampling matrix. When baited with ^{13}C labeled benzene or chlorobenzene, the Bio-Traps® can also be used to measure the degradation of benzene or chlorobenzene utilizing a method also known as stable isotope probing (SIP).

On September 30, 2013, URS field personnel deployed Bio-Trap® samplers in each of the LTMP wells (except GWE-5 cluster, ESL wells, and GWE-3D) for PLFA analysis. A benzene baited Bio-Trap® and a chlorobenzene baited Bio-Trap® were placed in monitoring wells BSA-MW-2D and CPA-MW-3D, respectively. Bio-Trap® samplers were attached to a stainless steel line secured to the well cap and lowered to the middle of the well screen.

On October 30, 2013, the Bio-Trap® samplers were retrieved from the wells, sealed in laboratory supplied bags, labeled with the proper well identification and placed in an iced sample cooler with a signed COC. Sealed sample coolers were sent to Microbial Insights, Inc. for analysis.

3.0 LABORATORY PROCEDURES

Samples were analyzed by TestAmerica for VOCs and MNA parameters, using the following methodologies:

- VOCs, via USEPA SW-846 Method 8260B
- MNA parameters: alkalinity (310.1), carbon dioxide (310.1), chloride (325.2), total and dissolved iron (6010C), total and dissolved manganese (6010B), dissolved gases (RSK 175), nitrate (353.2), sulfate (375.4), and total and dissolved organic carbon (415.1).

Laboratory results were provided in electronic and hard copy formats.

4.0 QUALITY ASSURANCE

Analytical data were reviewed for quality and completeness, as described in the Revised Long Term Monitoring Program (LTMP) Work Plan (Solutia 2009). Data qualifiers were added, as appropriate, and are included in the data tables and the laboratory result pages. The Quality Assurance report is included as **Appendix C**. The laboratory reports and data reviews are included in **Appendix D**.

A total of twenty-one groundwater samples (seventeen investigative samples, two field duplicate pairs, and one MS/MSD pair) were prepared and analyzed by TestAmerica Laboratories, Inc. of Savannah, Georgia for combinations of VOCs, dissolved gases, metals, and general chemistry. Additionally, two equipment blanks were prepared and analyzed by TestAmerica. Five trip blanks were included in coolers that contained VOC samples and were analyzed for VOCs. The results for the various analyses were submitted as sample delivery groups (SDGs) KPS097,

KPS098, KPS099, KPS100, and KPS101. The samples contained in these SDGs are listed below:

KPS097	
BSA-MW-4D-1113	CPA-MW-5D-1113
BSA-MW-5D-1113	4Q13 LTM Trip Blank #1
CPA-MW-4D-1113	
KPS098	
BSA-MW-1S-1113	CPA-MW-2D-1113
BSA-MW-3D-1113	CPA-MW-2D-1113-AD
CPA-MW-1D-1113	4Q13 LTM Trip Blank #2
CPA-MW-1D-1113-EB	
KPS099	
BSA-MW-2D-1113	CPA-MW-3D-1113-AD
BSA-MW-2D-EB	4Q13 LTM Trip Blank #3
CPA-MW-3D-1113	
KPS100	
GWE-3D-1113	GWE-5D-1113
GWE-5S-1113	4Q13 LTM Trip Blank #4
GWE-5M-1113	
KPS101	
ESL-MW-A-1113	ESL-MW-D1-1113
ESL-MW-C1-1113	4Q13 LTM Trip Blank #5

Evaluation of the groundwater analytical data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008), USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review (USEPA 2010), and the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009).

Based on the above mentioned criteria, groundwater results reported for the analyses performed were accepted for their intended use. Acceptable levels of accuracy, precision, and representativeness (based on MS/MSD, LCS, surrogate compounds and field duplicate results) were achieved for this data set, except where noted in this report. Completeness, which is defined to be the percentage of analytical results which are judged to be valid, including estimated detect/non-detect (**J/UJ**) data, was 100% percent.

5.0 OBSERVATIONS

Groundwater analytical detections and MNA results for the 4Q13 LTMP sampling event are presented in **Tables 2** and **3**, respectively. Benzene and chlorobenzenes were reported in samples collected from the LTMP wells during this sampling event. Each of these constituents is discussed below:

Benzene – Benzene was detected in samples collected from fifteen of the seventeen wells, at concentrations ranging from 1.5 µg/L (ESL-MW-C1) to 920,000 µg/L (BSA-MW-1S).

Downgradient of the Former Benzene Storage Area, benzene was detected in the DHU at a concentration of 100,000 µg/L (BSA-MW-2D) and at an estimated concentration of 90 µg/L (BSA-MW-3D). Near the river north of the Groundwater Migration Control System (GMCS), benzene was detected in the DHU at a concentration of 130 µg/L (BSA-MW-4D).

Benzene was detected at the Former Chlorobenzene Process Area (CPA) at a concentration of 9,300 µg/L (CPA-MW-1D). Downgradient of the Former Chlorobenzene Process Area, benzene was detected at concentrations of 47 µg/L (CPA-MW-4D), 3,800/3,700 µg/L (CPA-MW-3D and duplicate), and 610/640 µg/L (CPA-MW-2D and duplicate).

Benzene was not detected near the river north of GMCS at monitoring wells CPA-MW-5D or BSA-MW-5D.

Benzene was detected approximately one mile north of the Solutia WGK Facility at concentrations of 8.3 µg/L (ESL-MW-A), 1.5 µg/L (ESL-MW-C1), 45 µg/L (ESL-MW-D1), 36 µg/L (GWE-3D), 7.8 µg/L (GWE-5S), 5 µg/L (GWE-5M), and 9.6 µg/L (GWE-5D).

Chlorobenzenes (Total) – Total chlorobenzenes (i.e., sum of chlorobenzene, 1,2-dichlorobenzene, 1,3-dichlorobenzene, and 1,4, dichlorobenzene) were detected in thirteen of the seventeen wells sampled in 4Q13, at concentrations ranging from 1.4 µg/L (ESL-MW-C1) to 60,900 µg/L (CPA-MW-1D).

Downgradient of the Former Chlorobenzene Process Area, total chlorobenzenes were detected in the DHU at concentrations of 48,140/47,230 µg/L at the North Tank Farm (CPA-MW-2D and duplicate), along with concentrations of 290/300 µg/L (CPA-MW-3D and duplicate) and 259.3 µg/L (CPA-MW-4D). Total chlorobenzenes were detected in the DHU near the river north of the GMCS at a concentration of 1,900 µg/L (CPA-MW-5D).

Downgradient of the Former Benzene Storage Area, total chlorobenzenes were detected at a concentration of 2,750 µg/L (BSA-MW-3D). North of the SA2 GMCS, near the river, total chlorobenzenes were detected in the DHU at concentrations of 2,571 µg/L (BSA-MW-4D) and 440 µg/L (BSA-MW-5D).

Total chlorobenzenes were detected approximately one mile north of the Solutia WGK Facility at concentrations of 6.8 µg/L (ESL-MW-A), 1.4 µg/L (ESL-MW-C1), 1,541 µg/L (ESL-MW-D1), 2,085 µg/L (GWE-3D), and 182.2 µg/L (GWE-5D). Total chlorobenzenes were not detected at GWE-5S or GWE-5M.

Figure 4 displays benzene and total chlorobenzenes results from the 4Q13 sampling event.

Monitored Natural Attenuation – The MNA results for this quarter are presented in **Table 3**. PLFA and SIP laboratory results are included in **Appendix E**. Per the Executive Summary of

the SIP Study (**Appendix E**): "Incorporation of ^{13}C [carbon-13] into the biomass in wells BSA-MW-2D-1113 and CPA-MW-3D-1113 conclusively demonstrates that benzene and chlorobenzene biodegradation occurred under existing site conditions". Elevated levels of carbon dioxide and methane, which are biodegradation byproducts, in a majority of the LTM wells provide further evidence to support the occurrence of natural attenuation.

6.0 REFERENCES

Solutia Inc, 2009. Revised Long Term Monitoring Program Work Plan, Solutia Inc., W.G. Krummrich Facility, Sauget, Illinois, May 2009.

USEPA, 2010. Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data Review.

USEPA, 2008. Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review.

Figures

FALLING SPRINGS ROAD

STERLING STEEL

SITE H

SITE L

SITE M

SITE N

SITE I

DEAD CREEK

SITE G

CONTAINMENT CELL

CERRO COPPER

QUEENY AVENUE

ROUTE 3

AFTON CHEMICAL

MONSANTO AVENUE

W. G. KRUMMRICH FACILITY

BIG RIVER ZINC

ROUTE 3

MIDWEST RUBBER

CENTER ETHANOL COMPANY, LLC

LOT F

SITE O

PHILLIPS PETROLEUM

SITE P

AMEREN

PCHEM POTW

AMERICAN BOTTOMS POTW

SITE S

CLAYTON CHEMICAL

VEOLIA INCINERATION

KINDER MORGAN

SITE R

SITE Q

GROUNDWATER PUMPING WELLS

BARRIER WALL

MISSISSIPPI RIVER

LEGEND

W.G. KRUMMRICH FACILITY

SAUGET AREA #1

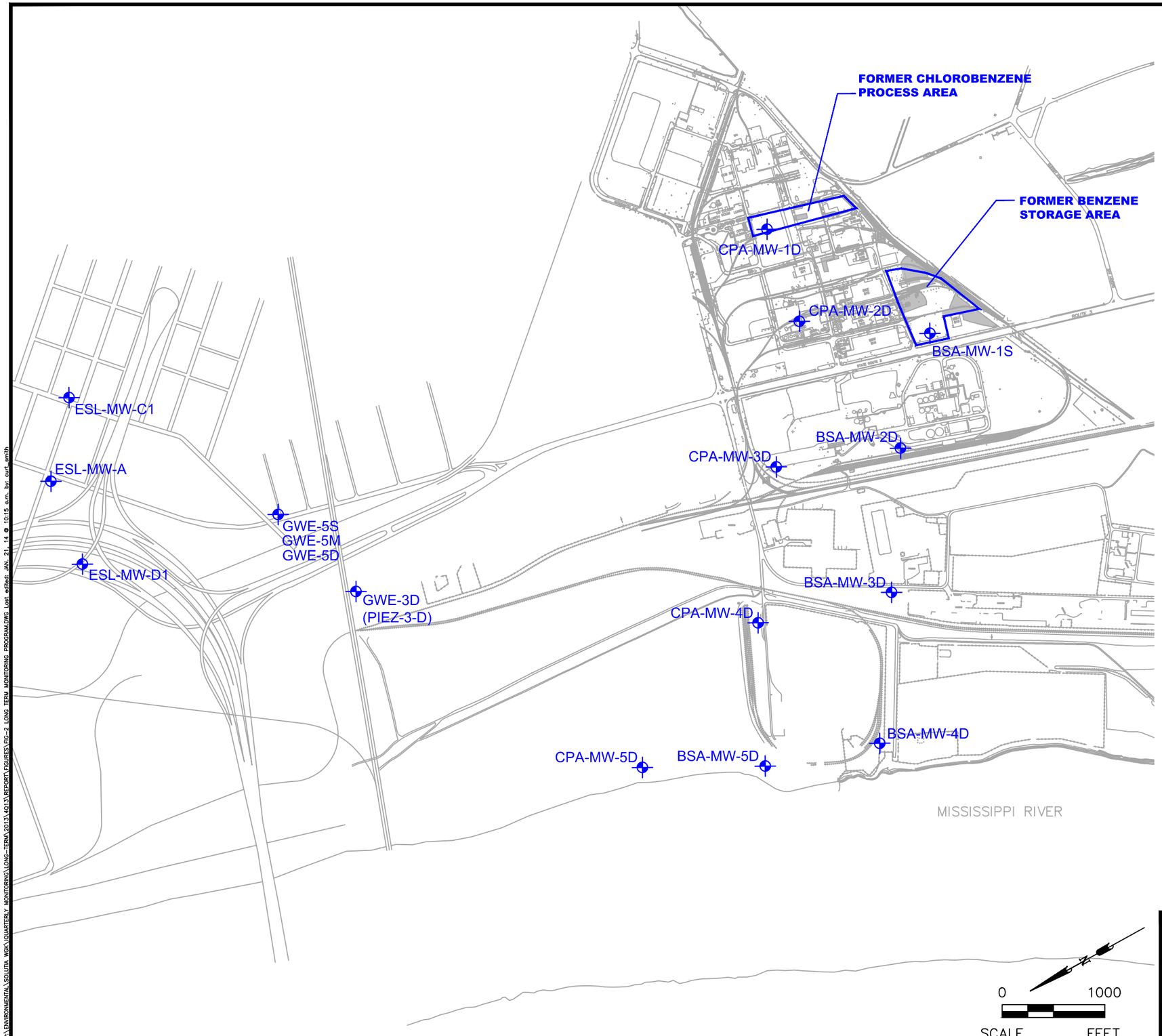
SAUGET AREA #2

0 1000

SCALE FEET

LONG–TERM MONITORING PROGRAM 4TH QUARTER 2013 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS		PROJECT NO. 21562962
URS		
DRN. BY:djd January 2014 DSGN. BY:nm CHKD. BY:nm	Site Location Map	FIG. NO. 1

File: P:\ENVIRONMENTAL\SOLUTIA WGK\QUARTERLY MONITORING\LONG-TERM\2013\4Q13\REPORT\FIGURES\FIG-1 SITE LOCATION MAP.DWG Last edited: JAN. 21, 14 @ 10:14 a.m. by: curt_smith



LEGEND

LONG–TERM MONITORING WELL LOCATION

NOTE:
REFER TO TABLE 1 FOR MONITORING WELL CONSTRUCTION INFORMATION.

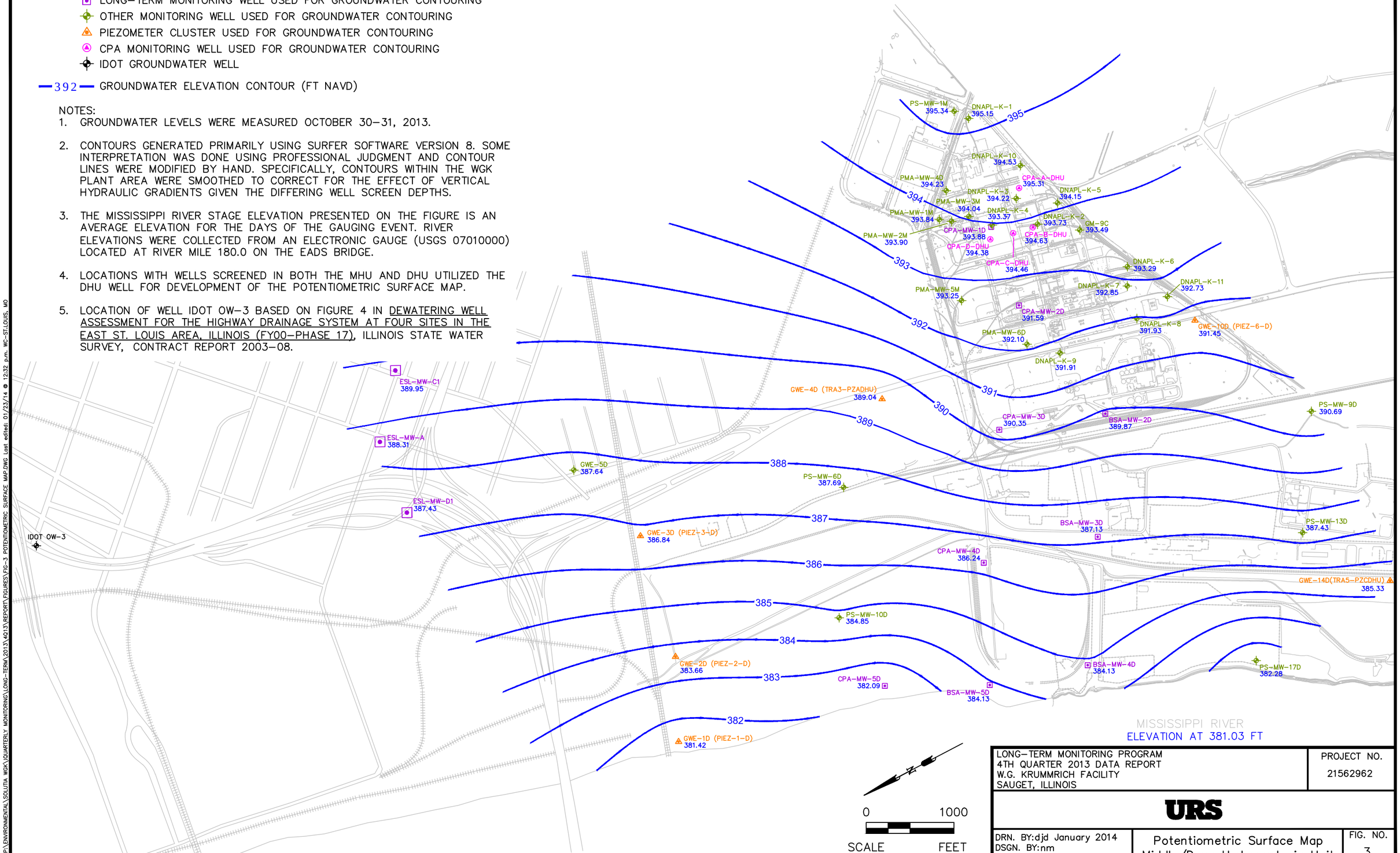
LONG–TERM MONITORING PROGRAM 4TH QUARTER 2013 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS	PROJECT NO. 21562962
URS	
DRN. BY:djd January 2014 DSGN. BY:nm CHKD. BY:nm	Long–Term Monitoring Program Well Locations
	FIG. NO. 2

LEGEND

- LONG-TERM MONITORING WELL USED FOR GROUNDWATER CONTOURING
- OTHER MONITORING WELL USED FOR GROUNDWATER CONTOURING
- PIEZOMETER CLUSTER USED FOR GROUNDWATER CONTOURING
- CPA MONITORING WELL USED FOR GROUNDWATER CONTOURING
- IDOT GROUNDWATER WELL
- 392 GROUNDWATER ELEVATION CONTOUR (FT NAVD)

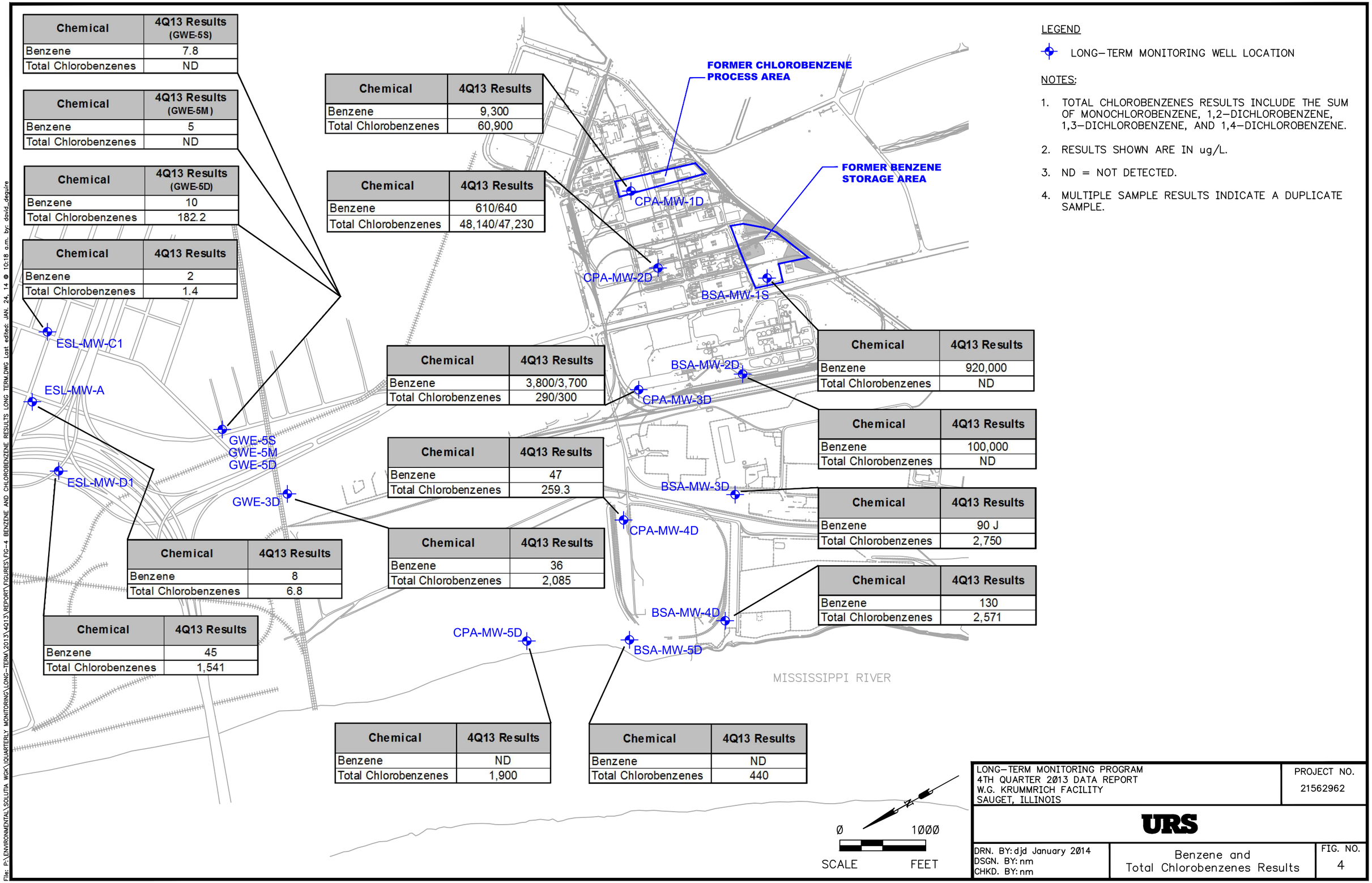
NOTES:

1. GROUNDWATER LEVELS WERE MEASURED OCTOBER 30-31, 2013.
2. CONTOURS GENERATED PRIMARILY USING SURFER SOFTWARE VERSION 8. SOME INTERPRETATION WAS DONE USING PROFESSIONAL JUDGMENT AND CONTOUR LINES WERE MODIFIED BY HAND. SPECIFICALLY, CONTOURS WITHIN THE WGK PLANT AREA WERE SMOOTHED TO CORRECT FOR THE EFFECT OF VERTICAL HYDRAULIC GRADIENTS GIVEN THE DIFFERING WELL SCREEN DEPTHS.
3. THE MISSISSIPPI RIVER STAGE ELEVATION PRESENTED ON THE FIGURE IS AN AVERAGE ELEVATION FOR THE DAYS OF THE GAUGING EVENT. RIVER ELEVATIONS WERE COLLECTED FROM AN ELECTRONIC GAUGE (USGS 07010000) LOCATED AT RIVER MILE 180.0 ON THE EADS BRIDGE.
4. LOCATIONS WITH WELLS SCREENED IN BOTH THE MHU AND DHU UTILIZED THE DHU WELL FOR DEVELOPMENT OF THE POTENTIOMETRIC SURFACE MAP.
5. LOCATION OF WELL IDOT OW-3 BASED ON FIGURE 4 IN DEWATERING WELL ASSESSMENT FOR THE HIGHWAY DRAINAGE SYSTEM AT FOUR SITES IN THE EAST ST. LOUIS AREA, ILLINOIS (FY00-PHASE 17), ILLINOIS STATE WATER SURVEY, CONTRACT REPORT 2003-08.



LONG-TERM MONITORING PROGRAM 4TH QUARTER 2013 DATA REPORT W.G. KRUMMRICH FACILITY SAUGET, ILLINOIS	PROJECT NO. 21562962
URS	
DRN. BY:djd January 2014 DSGN. BY:nm CHKD. BY:nm	Potentiometric Surface Map Middle/Deep Hydrogeologic Unit
	FIG. NO. 3

File: P:\ENVIRONMENTAL\SOLUTIA WGK\QUARTERLY MONITORING\LONG-TERM 2013\4Q13\REPORT\FIGURES\FIG-3 POTENTIOMETRIC SURFACE MAP.DWG Last edited: 01/23/14 @ 12:32 p.m. WC-ST.LOUIS, MO



Chemical	4Q13 Results (GWE-5S)
Benzene	7.8
Total Chlorobenzenes	ND

Chemical	4Q13 Results (GWE-5M)
Benzene	5
Total Chlorobenzenes	ND

Chemical	4Q13 Results (GWE-5D)
Benzene	10
Total Chlorobenzenes	182.2

Chemical	4Q13 Results
Benzene	2
Total Chlorobenzenes	1.4

Chemical	4Q13 Results
Benzene	9,300
Total Chlorobenzenes	60,900

Chemical	4Q13 Results
Benzene	610/640
Total Chlorobenzenes	48,140/47,230

Chemical	4Q13 Results
Benzene	3,800/3,700
Total Chlorobenzenes	290/300

Chemical	4Q13 Results
Benzene	47
Total Chlorobenzenes	259.3

Chemical	4Q13 Results
Benzene	8
Total Chlorobenzenes	6.8

Chemical	4Q13 Results
Benzene	36
Total Chlorobenzenes	2,085

Chemical	4Q13 Results
Benzene	45
Total Chlorobenzenes	1,541

Chemical	4Q13 Results
Benzene	ND
Total Chlorobenzenes	1,900

Chemical	4Q13 Results
Benzene	ND
Total Chlorobenzenes	440

Chemical	4Q13 Results
Benzene	920,000
Total Chlorobenzenes	ND

Chemical	4Q13 Results
Benzene	100,000
Total Chlorobenzenes	ND

Chemical	4Q13 Results
Benzene	90 J
Total Chlorobenzenes	2,750

Chemical	4Q13 Results
Benzene	130
Total Chlorobenzenes	2,571

LEGEND

LONG-TERM MONITORING WELL LOCATION

NOTES:

1. TOTAL CHLOROBENZENES RESULTS INCLUDE THE SUM OF MONOCHLOROBENZENE, 1,2-DICHLOROBENZENE, 1,3-DICHLOROBENZENE, AND 1,4-DICHLOROBENZENE.
2. RESULTS SHOWN ARE IN ug/L.
3. ND = NOT DETECTED.
4. MULTIPLE SAMPLE RESULTS INDICATE A DUPLICATE SAMPLE.

LONG-TERM MONITORING PROGRAM
4TH QUARTER 2013 DATA REPORT
W.G. KRUMMRICH FACILITY
SAUGET, ILLINOIS

PROJECT NO. 21562962

URS

DRN. BY: djd January 2014
DSGN. BY: nm
CHKD. BY: nm

Benzene and Total Chlorobenzenes Results

FIG. NO. 4

File: P:\ENVIRONMENTAL\SOLUTIA WGK\QUARTERLY MONITORING\LONG-TERM 2013\4Q13\REPORT\FIGURES\FIG-4 BENZENE AND CHLOROBENZENE RESULTS LONG TERM.DWG Last edited: JAN. 24, 14 @ 10:18 a.m. by: david_deguire

Tables

See last page of table for notes.

Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						October 30-31, 2013			
	Ground Elevation* (feet)	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	NAPL Thickness (feet)	Depth to Bottom** (feet btoc)	Water Elevation* (feet)
Shallow Hydrogeologic Unit (SHU 395-380 feet NAVD 88)										
BSA-MW-1S	409.49	412.31	19.68	24.68	389.81	384.81	20.08	-	27.34	392.23
GWE-5S	408.47	408.05	17.91	27.91	390.56	380.56	20.13	-	27.91	387.92
Middle Hydrogeologic Unit (MHU 380-350 feet NAVD 88)										
GWE-5M	408.59	408.20	48.10	58.10	360.49	350.49	20.35	-	58.10	387.85
PMA-MW-1M	410.32	410.08	54.54	59.54	355.78	350.78	16.24	-	59.65	393.84
PMA-MW-2M	412.26	411.93	56.87	61.87	355.39	350.39	18.03	-	51.32	393.90
PMA-MW-3M	412.36	412.10	57.07	62.07	355.29	350.29	18.06	-	61.84	394.04
PMA-MW-5M	411.27	410.97	52.17	57.17	359.10	354.10	17.72	-	57.02	393.25
PS-MW-1M	409.37	412.59	37.78	42.78	371.59	366.59	17.25	-	46.07	395.34
Deep Hydrogeologic Unit (DHU 350 feet NAVD 88 - Bedrock)										
BSA-MW-2D	412.00	415.13	68.92	73.92	343.08	338.08	25.26	-	77.05	389.87
BSA-MW-3D	412.91	415.74	107.02	112.02	305.89	300.89	28.61	-	114.83	387.13
BSA-MW-4D	425.00	424.69	118.54	123.54	306.46	301.46	39.69	-	123.22	385.00
BSA-MW-5D	420.80	420.49	115.85	120.85	304.95	299.95	36.36	-	121.00	384.13
CPA-A-DHU	413.95	416.24	108	113.3	305.95	300.65	20.93	-	115.21	395.31
CPA-B-DHU	409.12	408.68	101	106.5	308.12	302.62	14.05	-	105.55	394.63
CPA-C-DHU	408.92	408.57	101	106	307.92	302.92	14.11	-	105.57	394.46
CPA-D-DHU	409.63	412.20	101	105.9	308.63	303.73	17.82	-	108.34	394.38
CPA-MW-1D	408.62	412.23	66.12	71.12	342.50	337.50	18.35	-	74.69	393.88
CPA-MW-2D	408.51	408.20	99.96	104.96	308.55	303.55	16.61	-	104.66	391.59
CPA-MW-3D	410.87	410.67	108.20	113.20	302.67	297.67	20.32	-	112.87	390.35
CPA-MW-4D	421.57	421.20	116.44	121.44	305.13	300.13	34.96	-	121.03	386.24
CPA-MW-5D	411.03	413.15	107.63	112.63	303.40	298.40	31.06	-	111.90	382.09
DNAPL-K-1	413.07	415.56	108.20	123.20	304.87	289.87	20.41	-	123.19	395.15
DNAPL-K-2	407.94	407.72	97.63	112.63	310.31	295.31	13.99	-	112.38	393.73
DNAPL-K-3	412.13	415.91	104.80	119.80	307.33	292.33	21.69	-	123.35	394.22
DNAPL-K-4	409.48	412.53	102.55	117.55	306.93	291.93	19.16	-	118.06	393.37
DNAPL-K-5	412.27	411.91	102.15	117.15	310.12	295.12	17.76	-	116.52	394.15
DNAPL-K-6	410.43	410.09	102.47	117.47	307.96	292.96	16.80	-	116.96	393.29

Table 1
Monitoring Well Gauging Information

Well ID	Construction Details						October 30-31, 2013			
	Ground Elevation* (feet)	Casing Elevation* (feet)	Depth to Top of Screen (feet bgs)	Depth to Bottom of Screen (feet bgs)	Top of Screen Elevation* (feet)	Bottom of Screen Elevation* (feet)	Depth to Water (feet btoc)	NAPL Thickness (feet)	Depth to Bottom** (feet btoc)	Water Elevation* (feet)
Deep Hydrogeologic Unit (DHU 350 feet NAVD 88 - Bedrock) (continued)										
DNAPL-K-7	408.32	407.72	100.40	115.40	307.92	292.92	14.87	-	115.38	392.85
DNAPL-K-8	408.56	411.38	102.65	117.65	305.91	290.91	19.45	-	117.61	391.93
DNAPL-K-9	406.45	405.97	97.42	112.42	309.03	294.03	14.06	-	111.25	391.91
DNAPL-K-10	413.50	413.25	105.43	120.43	308.07	293.07	18.72	-	120.26	394.53
DNAPL-K-11	412.20	411.78	105.46	120.46	306.74	291.74	19.05	-	120.26	392.73
GM-9C	409.54	411.21	88.00	108.00	321.54	301.54	17.72	-	108.34	393.49
GWE-1D	412.80	415.60	117.00	127.00	295.80	285.80	34.18	-	128.55	381.42
GWE-2D	417.45	417.14	127.00	137.00	290.45	280.45	33.48	-	136.72	383.66
GWE-3D	415.03	417.66	104.60	114.60	313.06	303.06	30.82	-	114.94	386.84
GWE-4D	406.05	405.74	74.00	80.00	332.05	326.05	16.70	-	78.80	389.04
GWE-5D	408.79	408.38	100.43	105.43	308.36	303.36	20.74	-	105.32	387.64
GWE-10D	410.15	412.87	102.50	112.50	307.65	297.65	21.42	-	114.86	391.45
GWE-14D	420.47	422.90	90.00	96.00	330.47	324.47	37.57	-	97.09	385.33
ESL-MW-A	412.93	412.59	105.50	110.50	307.43	302.43	24.28	-	109.96	388.31
ESL-MW-C1	410.09	409.79	104.00	109.00	306.09	301.09	19.84	-	108.70	389.95
ESL-MW-D1	416.38	416.04	114.00	119.00	302.38	297.38	28.61	-	119.33	387.43
PMA-MW-4D	411.22	410.88	68.84	73.84	342.38	337.38	16.65	-	73.35	394.23
PMA-MW-6D	407.63	407.32	96.49	101.49	311.14	306.14	15.22	-	101.34	392.10
PS-MW-6D	404.11	406.63	102.32	107.32	304.31	299.31	18.94	-	109.86	387.69
PS-MW-9D	403.92	403.52	100.40	105.40	303.52	298.52	12.83	-	105.17	390.69
PS-MW-10D	409.63	412.18	103.78	108.78	308.40	303.40	27.33	-	111.31	384.85
PS-MW-13D	405.80	405.53	106.08	111.08	299.72	294.72	18.10	-	110.62	387.43
PS-MW-17D	420.22	423.26	121.25	126.25	298.97	293.97	40.98	-	134.03	382.28
SA2-MW-1D	403.79	406.03	105.01	115.01	301.02	291.02	27.49	-	102.31	378.54

Notes:
* - Elevation based upon North American Vertical Datum (NAVD) 88 datum
** - Total depths are measured annually during the first quarter of each year
bgs - below ground surface
btoc - below top of casing
NM - not measured

Table 2
Groundwater Analytical Results

Sample ID	Sample Date	VOCs (µg/L)				
		Benzene	Chlorobenzene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene
BENZENE STORAGE AREA						
BSA-MW-1S-1113	11/5/2013	**920,000**	<10,000	<10,000	<10,000	<10,000
BSA-MW-2D-1113	11/6/2013	**100,000**	<2,000	<2,000	<2,000	<2,000
BSA-MW-3D-1113	11/5/2013	**90 J**	**2,400**	<50	<50	**350**
BSA-MW-4D-1113	11/4/2013	**130**	**2,500**	<25	<25	**71**
BSA-MW-5D-1113	11/4/2013	<5	**440**	<5	<5	<5
CHLOROBENZENE PROCESS AREA						
CPA-MW-1D-1113	11/5/2013	**9,300**	**23,000**	**21,000**	**1,900**	**15,000**
CPA-MW-2D-1113	11/5/2013	**610**	**36,000**	**640**	**500**	**11,000**
CPA-MW-2D-1113-AD	11/5/2013	**640**	**35,000**	**730**	**500**	**11,000**
CPA-MW-3D-1113	11/6/2013	**3,800**	**290**	<100	<100	<100
CPA-MW-3D-1113-AD	11/6/2013	**3,700**	**300**	<50	<50	<50
CPA-MW-4D-1113	11/4/2013	**47**	**250**	**5.9**	<2	**3.4**
CPA-MW-5D-1113	11/4/2013	<20	**1,900**	<20	<20	<20
AREA NORTH OF WGK						
ESL-MW-A-1113	11/8/2013	**8.3**	**4.2**	<1	<1	**2.6**
ESL-MW-C1-1113	11/8/2013	**1.5**	<1	<1	<1	**1.4**
ESL-MW-D1-1113	11/8/2013	**45**	**1,500**	<25	<25	**41**
GWE-3D-1113	11/7/2013	**36**	**1,900**	**25**	<25	**160**
GWE-5S-1113	11/7/2013	**7.8**	<1	<1	<1	<1
GWE-5M-1113	11/7/2013	**5**	<1	<1	<1	<1
GWE-5D-1113	11/7/2013	**9.6**	**160**	**4.2**	<2	**18**

Notes:

µg/L = micrograms per liter

< = Result is non-detect, less than the reporting limit given.

J = estimated value

BOLD indicates concentration greater than reporting limit.

AD = Analytical Duplicate

Table 3
Monitored Natural Attenuation Results Summary

Sample ID	Sample Date	Alkalinity (mg/L)	Carbon Dioxide (mg/L)	Chloride (mg/L)	Dissolved Oxygen (mg/L)	Ethane (ug/L)	Ethylene (ug/L)	Ferrous Iron (mg/L)	Iron (mg/L)	Iron, Dissolved (mg/L)	Manganese (mg/L)	Manganese, Dissolved (mg/L)	Methane (ug/L)	Nitrogen, Nitrate (mg/L)	Sulfate as SO4 (mg/L)	Total Organic Carbon (mg/L)	Dissolved Organic Carbon (mg/L)	ORP (mV)
BENZENE STORAGE AREA																		
BSA-MW-1S-1113	11/5/2013	760	41	100	-0.02	<1.1	<1		8.3		0.87		7000	<0.05	<5	7.2		-171.91
BSA-MW-1S-F(0.2)-1113	11/5/2013							>3.30		8.2		0.87					6.7 J	
BSA-MW-2D-1113	11/6/2013	650	30	100	-0.06	14	<1		3.6 J		0.55 J		11000	<0.05	<5	6.1 J		-140.31
BSA-MW-2D-F(0.2)-1113	11/6/2013							3.07		3.7 J		0.56 J					5.5 J	
BSA-MW-3D-1113	11/5/2013	440	29	120	0.04	3.3	<1		10		0.52		1900	<0.05	64	3.4		-129.18
BSA-MW-3D-F(0.2)-1113	11/5/2013							>3.30		10		0.53					3.6	
BSA-MW-4D-1113	11/4/2013	480	30	94	0.09	3.8	<1		7.3		0.55		840	<0.05	110	4		-116.8
BSA-MW-4D-F(0.2)-1113	11/4/2013							>3.30		7		0.53					4.4	
BSA-MW-5D-1113	11/4/2013	640	49	290	-0.01	15	<1		12		0.28		13000	<0.05	<5	6.6 J		-132.5
BSA-MW-5D-F(0.2)-1113	11/4/2013									12		0.28					7.3	
CHLOROBENZENE PROCESS AREA																		
CPA-MW-1D-1113	11/5/2013	720	<5	100	-0.09	<1.1	<1		0.2		0.036		<0.58	<0.05	<5	11		-117.81
CPA-MW-1D-F(0.2)-1113	11/5/2013							0		0.07		0.026					10 J	
CPA-MW-2D-1113	11/5/2013	470	30	48	0.32	2	<1		6.4		0.36		850	<0.05	59	8.8		-122.81
CPA-MW-2D-F(0.2)-1113	11/5/2013							>3.30		7		0.4					7.9	
CPA-MW-3D-1113	11/6/2013	620	42	310	-0.04	22	<1		12 J		0.74 J		20000	<0.05	<5	8.2		-124.09
CPA-MW-3D-F(0.2)-1113	11/6/2013									12 J		0.72 J					8.2 J	
CPA-MW-4D-1113	11/4/2013	620	43	170	0.09	12	<1		12		0.3		9800	<0.05	<5	7.3 J		-142.46
CPA-MW-4D-F(0.2)-1113	11/4/2013							>3.30		11		0.29					8.2	
CPA-MW-5D-1113	11/4/2013	550	72	210	0.06	1.2	<1		21		0.62		130	<0.05	120	3.6		-99.84
CPA-MW-5D-F(0.2)-1113	11/4/2013							3.28		21		0.62					3.7	
AREA NORTH OF WGK																		
ESL-MW-A-1113	11/8/2013	370	32	97	-0.07	<1.1	<1		16		0.46		4	<0.05	620	3.1		-125.23
ESL-MW-A-F(0.2)-1113	11/8/2013							>3.30		16		0.47					2.9	
ESL-MW-C1-1113	11/8/2013	390	34	100	0	<1.1	<1		13		0.43		3.3	<0.05	760	3.4		-122.31
ESL-MW-C1-F(0.2)-1113	11/8/2013							>3.30		13		0.44					3.5	
ESL-MW-D1-1113	11/8/2013	380	36	120	-0.05	<1.1	<1		15		0.4		44	<0.05	570	3.2		-120.73
ESL-MW-D1-F(0.2)-1113	11/8/2013							>3.30		15		0.41					3.1	
GWE-3D-1113	11/7/2013	390	43	870	0.1	<1.1	<1		26		0.74		35	<0.05	410	4.9		-154.06
GWE-3D-F(0.2)-1113	11/7/2013							>3.30		26		0.76					4.8	
GWE-5S-1113	11/7/2013	440	49	34	0.1	<1.1	<1		<0.05		0.24		1.2	0.37	100	4.2		59.58
GWE-5S-F(0.2)-1113	11/7/2013							0		<0.05		0.24					4	
GWE-5M-1113	11/7/2013	430	40	51	-0.07	<1.1	<1		22		1.2		31	<0.05	100	1.8		-147.94
GWE-5M-F(0.2)-1113	11/7/2013							>3.30		23		1.2					1.7	
GWE-5D-1113	11/7/2013	330	28	94	-0.03	<1.1	<1		16		0.43		45	<0.05	460	2.6		-148.83
GWE-5D-F(0.2)-1113	11/7/2013							>3.30		16		0.42					2.5	

Notes:
DO and ORP were measured in the field using an In-Situ Troll 9500 equipped with a flow-thru cell. Values presented represent final measurements before sampling.
Ferrous Iron readings were measured in the field using a Hach DR-890 Colorimeter after the groundwater passed through a 0.2 µm filter
F(0.2) = Sample was filtered utilizing a 0.2 µm filter during sample collection
H = prepped or analyzed outside of specified holding time
J = estimated detected value
mg/L = milligrams per liter
mV = millivolts
ug/L = micrograms per liter
< = Result is non-detect, less than the reporting limit given - indicated as a U qualifier on lab data
A blank space indicates sample not analyzed for select analyte.

Appendix A

Groundwater Purging and Sampling Forms

In-Situ Inc.

Troll 9000 | **Low-Flow System**

11/05/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm mc
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - LTM

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	31 [ft]
Pump placement from TOC	25 [ft]

Well Information:

Well Id	BSA-MW-1S
Well diameter	2 [in]
Well total depth	27.34 [ft]
Depth to top of screen	22.5 [ft]
Screen length	60 [in]
Depth to Water	20.5 [ft]

Pumping information:

Final pumping rate	300 [mL/min]
Flowcell volume	772.84 [mL]
Calculated Sample Rate	155 [sec]
Sample rate	155 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	10:02:24	66.47	7.09	1874.67	17.42	0.00	-171.30
	10:05:04	67.06	7.09	1884.40	22.10	0.00	-171.43
	10:07:45	67.13	7.09	1890.68	30.31	-0.03	-171.78
	10:10:25	66.98	7.09	1892.82	33.85	-0.03	-172.03
	10:13:06	66.87	7.09	1892.34	4.44	-0.02	-171.91
Variance in last 3 readings	10:07:45	0.07	0.00	6.28	8.21	-0.02	-0.34
	10:10:25	-0.15	0.00	2.15	3.55	0.00	-0.26
	10:13:06	-0.11	0.00	-0.48	-29.41	0.01	0.13

Notes:

In-Situ Inc.

Troll 9000 **Low-Flow System**

11/06/13 **ISI Low-Flow Log**

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - LTM

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	80.55 [ft]
Pump placement from TOC	0 [ft]

Well Information:

Well Id	BSA-MW-2D
Well diameter	2 [in]
Well total depth	77.05 [ft]
Depth to top of screen	72.05 [ft]
Screen length	60 [in]
Depth to Water	25.5 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	1049.1 [mL]
Calculated Sample Rate	158 [sec]
Sample rate	158 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	11:34:36	16.43	7.14	1578.19	689.48	0.00	-137.23
	11:37:19	16.46	7.16	1582.16	18.86	-0.04	-138.38
	11:40:03	16.56	7.16	1584.73	262.73	-0.05	-139.32
	11:42:46	16.54	7.17	1585.37	64.10	-0.06	-140.14
	11:45:30	16.49	7.17	1578.91	3.93	-0.06	-140.31
Variance in last 3 readings	11:40:03	0.10	0.01	2.57	243.87	-0.01	-0.94
	11:42:46	-0.02	0.01	0.65	-198.63	-0.02	-0.81
	11:45:30	-0.05	0.00	-6.46	-60.17	0.00	-0.17

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**
11/05/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm mc
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - LTM

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	118.35 [ft]
Pump placement from TOC	112.35 [ft]

Well Information:

Well Id	BSA-MW-3D
Well diameter	2 [in]
Well total depth	114.83 [ft]
Depth to top of screen	109.85 [ft]
Screen length	60 [in]
Depth to Water	28.6 [ft]

Pumping information:

Final pumping rate	300 [mL/min]
Flowcell volume	1259.85 [mL]
Calculated Sample Rate	252 [sec]
Sample rate	252 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	14:58:58	62.71	6.94	1459.23	33.88	0.69	-120.71
	15:03:19	62.76	6.93	1461.37	5.76	0.25	-124.30
	15:07:40	62.66	6.92	1463.19	52.64	0.15	-127.04
	15:12:01	62.59	6.92	1462.39	4.21	0.04	-128.37
	15:16:23	62.61	6.92	1462.75	6.62	0.04	-129.18
Variance in last 3 readings	15:07:40	-0.09	0.00	1.82	46.88	-0.11	-2.74
	15:12:01	-0.07	-0.01	-0.80	-48.43	-0.10	-1.33
	15:16:23	0.02	0.00	0.36	2.41	0.00	-0.81

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**

11/04/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm mc
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - LTM

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	126.73 [ft]
Pump placement from TOC	120.73 [ft]

Well Information:

Well Id	BSA-MW-4D
Well diameter	2 [in]
Well total depth	123.22 [ft]
Depth to top of screen	118.23 [ft]
Screen length	60 [in]
Depth to Water	39.46 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	1306.58 [mL]
Calculated Sample Rate	196 [sec]
Sample rate	196 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	13:25:06	61.91	6.92	1492.87	20.16	0.21	-114.61
	13:28:29	61.94	6.93	1493.44	19.10	0.18	-115.47
	13:31:52	62.00	6.92	1493.16	25.54	0.13	-116.03
	13:35:16	62.03	6.92	1495.99	61.66	0.10	-116.50
	13:38:39	61.97	6.93	1490.83	0.41	0.09	-116.80
Variance in last 3 readings	13:31:52	0.06	0.00	-0.28	6.44	-0.06	-0.56
	13:35:16	0.02	0.00	2.83	36.12	-0.03	-0.47
	13:38:39	-0.05	0.00	-5.16	-61.25	-0.01	-0.30

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**

11/04/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm mc
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - LTM

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	124.04 [ft]
Pump placement from TOC	118.04 [ft]

Well Information:

Well Id	BSA-MW-5D
Well diameter	2 [in]
Well total depth	121 [ft]
Depth to top of screen	115.54 [ft]
Screen length	60 [in]
Depth to Water	35.8 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	1291.58 [mL]
Calculated Sample Rate	194 [sec]
Sample rate	194 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	15:02:45	63.30	6.95	2243.64	19.46	0.01	-134.72
	15:06:06	63.26	6.99	2247.93	12.90	0.93	-117.78
	15:09:27	63.25	6.95	2283.56	67.48	0.05	-127.58
	15:12:48	63.28	6.95	2246.19	38.01	0.05	-130.40
	15:16:09	63.26	6.95	2253.05	2.53	-0.01	-132.50
Variance in last 3 readings	15:09:27	-0.01	-0.04	35.63	54.58	-0.88	-9.80
	15:12:48	0.03	0.00	-37.37	-29.47	-0.01	-2.82
	15:16:09	-0.03	0.00	6.86	-35.47	-0.05	-2.10

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**

11/05/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm mc
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - LTM

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	73.32 [ft]
Pump placement from TOC	68.32 [ft]

Well Information:

Well Id	CPA-MW-1D
Well diameter	2 [in]
Well total depth	74.69 [ft]
Depth to top of screen	65.82 [ft]
Screen length	60 [in]
Depth to Water	18.66 [ft]

Pumping information:

Final pumping rate	300 [mL/min]
Flowcell volume	1008.79 [mL]
Calculated Sample Rate	202 [sec]
Sample rate	202 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	13:22:49	66.17	8.58	1768.40	0.27	-0.04	-96.25
	13:26:19	66.24	8.62	1796.98	0.22	-0.05	-103.95
	13:29:49	66.30	8.67	1828.87	-0.23	-0.07	-109.64
	13:33:18	66.21	8.71	1844.99	-0.08	-0.08	-113.79
	13:36:47	65.94	8.75	1861.54	6.86	-0.09	-117.81
Variance in last 3 readings	13:29:49	0.06	0.05	31.89	-0.45	-0.02	-5.69
	13:33:18	-0.09	0.04	16.12	0.15	-0.01	-4.15
	13:36:47	-0.26	0.04	16.55	6.94	-0.01	-4.02

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**

11/05/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm mc
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - LTM

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	108.15 [ft]
Pump placement from TOC	102.15 [ft]

Well Information:

Well Id	CPA-MW-2D
Well diameter	2 [in]
Well total depth	104.66 [ft]
Depth to top of screen	99.65 [ft]
Screen length	60 [in]
Depth to Water	16.96 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	1202.98 [mL]
Calculated Sample Rate	181 [sec]
Sample rate	181 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	11:42:49	65.98	6.94	1155.04	19.65	0.48	-120.24
	11:45:56	66.11	6.94	1163.47	16.74	0.45	-121.10
	11:49:05	66.13	6.94	1171.05	14.98	0.43	-121.70
	11:52:11	66.08	6.94	1177.37	13.82	0.38	-122.34
	11:55:19	66.15	6.94	1183.64	14.67	0.32	-122.81
Variance in last 3 readings	11:49:05	0.02	0.00	7.59	-1.75	-0.02	-0.60
	11:52:11	-0.05	0.00	6.32	-1.16	-0.05	-0.64
	11:55:19	0.06	0.00	6.26	0.85	-0.06	-0.47

Notes:

In-Situ Inc.

Troll 9000 **Low-Flow System**

11/06/13 **ISI Low-Flow Log**

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - LTM

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	116.5 [ft]
Pump placement from TOC	0 [ft]

Well Information:

Well Id	CPA-MW-3D
Well diameter	2 [in]
Well total depth	112.87 [ft]
Depth to top of screen	108 [ft]
Screen length	60 [in]
Depth to Water	20.48 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	1249.54 [mL]
Calculated Sample Rate	188 [sec]
Sample rate	188 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	13:56:19	17.10	7.01	2131.25	161.58	-0.03	-123.75
	13:59:34	17.02	7.01	2123.48	59.32	-0.06	-124.22
	14:02:50	16.83	7.01	2119.91	23.79	-0.06	-124.48
	14:06:04	16.76	7.01	2132.96	157.96	-0.03	-124.52
	14:09:18	16.28	7.01	2114.94	2.37	-0.04	-124.09
Variance in last 3 readings	14:02:50	-0.19	0.00	-3.57	-35.52	0.00	-0.26
	14:06:04	-0.06	0.00	13.05	134.17	0.03	-0.04
	14:09:18	-0.49	0.00	-18.02	-155.59	-0.01	0.43

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**
11/04/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm mc
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - LTM

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	124.57 [ft]
Pump placement from TOC	118.57 [ft]

Well Information:

Well Id	CPA-MW-4D
Well diameter	2 [in]
Well total depth	121.03 [ft]
Depth to top of screen	116.07 [ft]
Screen length	60 [in]
Depth to Water	34.86 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	1294.53 [mL]
Calculated Sample Rate	195 [sec]
Sample rate	195 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	11:31:02	61.57	6.96	1760.25	53.24	0.28	-132.93
	11:34:24	61.70	6.96	1766.12	71.15	0.19	-137.20
	11:37:46	61.74	6.96	1770.22	416.03	0.15	-139.68
	11:41:08	61.60	6.96	1797.79	1.17	0.13	-141.01
	11:44:30	61.64	6.96	1790.87	8.66	0.09	-142.46
Variance in last 3 readings	11:37:46	0.04	0.00	4.10	344.88	-0.04	-2.48
	11:41:08	-0.13	0.00	27.58	-414.86	-0.02	-1.33
	11:44:30	0.03	0.00	-6.92	7.50	-0.04	-1.45

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**

11/04/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm mc
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - LTM

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	118.25 [ft]
Pump placement from TOC	112.25 [ft]

Well Information:

Well Id	CPA-MW-5D
Well diameter	2 [in]
Well total depth	111.9 [ft]
Depth to top of screen	109.75 [ft]
Screen length	60 [in]
Depth to Water	30.45 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	1259.3 [mL]
Calculated Sample Rate	189 [sec]
Sample rate	189 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	9:50:18	59.72	6.63	1948.30	46.22	0.11	-101.64
	9:53:35	59.98	6.99	2.80	-0.65	8.32	-113.02
	9:56:51	60.27	6.64	1952.93	-1.11	0.22	-93.30
	10:00:06	60.27	6.63	1956.69	-0.91	0.08	-97.45
	10:03:22	60.28	6.63	1957.91	-0.31	0.06	-99.84
Variance in last 3 readings	9:56:51	0.30	-0.34	1950.13	-0.46	-8.10	19.72
	10:00:06	-0.01	-0.01	3.76	0.20	-0.14	-4.15
	10:03:22	0.01	0.00	1.22	0.60	-0.03	-2.40

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**
11/08/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - ESL

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	112.5 [ft]
Pump placement from TOC	107.66 [ft]

Well Information:

Well Id	ESL-MW-A
Well diameter	2 [in]
Well total depth	109.96 [ft]
Depth to top of screen	105.16 [ft]
Screen length	60 [in]
Depth to Water	24.5 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	1227.24 [mL]
Calculated Sample Rate	185 [sec]
Sample rate	185 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	13:35:21	60.67	6.91	2177.63	10.73	-0.04	-123.34
	13:38:33	60.72	6.90	2177.47	11.05	-0.05	-124.11
	13:41:45	60.77	6.91	2180.48	20.41	-0.06	-124.46
	13:44:56	60.88	6.91	2179.80	14.71	-0.07	-124.63
	13:48:08	60.95	6.91	2177.97	7.48	-0.07	-125.23
Variance in last 3 readings	13:41:45	0.06	0.00	3.01	9.36	0.00	-0.34
	13:44:56	0.11	0.00	-0.69	-5.70	-0.02	-0.17
	13:48:08	0.07	0.00	-1.83	-7.23	0.00	-0.60

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**

11/08/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - ESL

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	111.19 [ft]
Pump placement from TOC	106.2 [ft]

Well Information:

Well Id	ESL-MW-C1
Well diameter	2 [in]
Well total depth	108.7 [ft]
Depth to top of screen	103.7 [ft]
Screen length	60 [in]
Depth to Water	20.2 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	1219.93 [mL]
Calculated Sample Rate	183 [sec]
Sample rate	183 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	10:04:55	59.87	7.11	2180.32	117.62	0.17	-119.92
	10:08:05	59.88	6.99	2236.36	27.15	0.08	-117.82
	10:11:14	59.98	6.94	2273.64	9.71	0.04	-119.57
	10:14:24	60.01	6.92	2296.27	5.50	0.02	-121.11
	10:17:34	60.10	6.91	2312.76	4.70	0.00	-122.31
Variance in last 3 readings	10:11:14	0.10	-0.05	37.28	-17.44	-0.04	-1.75
	10:14:24	0.03	-0.02	22.63	-4.21	-0.03	-1.54
	10:17:34	0.09	-0.01	16.48	-0.80	-0.02	-1.20

Notes:

In-Situ Inc.

Troll 9000 | **Low-Flow System**
11/08/13 | **ISI Low-Flow Log**

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - ESL

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	121.78 [ft]
Pump placement from TOC	116.16 [ft]

Well Information:

Well Id	ESL-MW-D1
Well diameter	2 [in]
Well total depth	119.33 [ft]
Depth to top of screen	113.66 [ft]
Screen length	60 [in]
Depth to Water	28.8 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	1278.98 [mL]
Calculated Sample Rate	192 [sec]
Sample rate	192 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	11:52:03	61.00	6.86	2083.19	11.65	-0.04	-118.03
	11:55:22	60.98	6.86	2080.71	11.51	-0.04	-118.80
	11:58:41	60.98	6.86	2078.06	10.23	-0.05	-119.57
	12:02:00	60.94	6.86	2076.87	10.42	-0.04	-120.17
	12:05:19	60.89	6.86	2073.62	8.27	-0.05	-120.73
Variance in last 3 readings	11:58:41	0.01	0.00	-2.64	-1.28	0.00	-0.77
	12:02:00	-0.04	0.00	-1.20	0.19	0.00	-0.60
	12:05:19	-0.05	0.00	-3.24	-2.15	-0.01	-0.56

Notes:

In-Situ Inc.

Troll 9000 | Low-Flow System
11/07/13 | ISI Low-Flow Log

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - LTM

Pump Information:

Pump Model/Type	Peristaltic
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	116 [ft]
Pump placement from TOC	112.23 [ft]

Well Information:

Well Id	GWE-3D
Well diameter	1 [in]
Well total depth	114.94 [ft]
Depth to top of screen	107.23 [ft]
Screen length	120 [in]
Depth to Water	30.73 [ft]

Pumping information:

Final pumping rate	200 [mL/min]
Flowcell volume	600 [mL]
Calculated Sample Rate	180 [sec]
Sample rate	180 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [F]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	15:11:11	61.73	6.81	4076.16	18.83	0.15	-164.55
	15:14:17	61.71	6.81	4078.01	37.85	0.13	-161.34
	15:17:24	61.67	6.80	4071.89	7.72	0.12	-158.30
	15:20:30	61.67	6.80	4069.59	25.16	0.11	-156.03
	15:23:37	61.51	6.80	4065.46	6.84	0.10	-154.06
Variance in last 3 readings	15:17:24	-0.04	-0.01	-6.12	-30.13	-0.01	3.04
	15:20:30	0.00	0.00	-2.30	17.44	-0.01	2.27
	15:23:37	-0.16	0.00	-4.13	-18.33	-0.01	1.97

Notes:

In-Situ Inc.

Troll 9000 | Low-Flow System
11/07/13 | ISI Low-Flow Log

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - SUPP

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	28.49 [ft]
Pump placement from TOC	24.05 [ft]

Well Information:

Well Id	GWE-5S
Well diameter	2 [in]
Well total depth	27.91 [ft]
Depth to top of screen	17.49 [ft]
Screen length	120 [in]
Depth to Water	0 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	600 [mL]
Calculated Sample Rate	90 [sec]
Sample rate	90 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	13:27:54	17.57	6.69	1150.90	15.25	0.12	51.88
	13:29:27	17.54	6.69	1149.94	21.06	0.12	53.77
	13:31:00	17.53	6.69	1148.89	19.90	0.12	55.56
	13:32:33	17.54	6.69	1148.15	19.94	0.11	57.57
	13:34:06	17.49	6.68	1146.38	19.86	0.10	59.58
Variance in last 3 readings	13:31:00	-0.01	0.00	-1.05	-1.15	-0.01	1.80
	13:32:33	0.02	0.00	-0.74	0.04	-0.01	2.01
	13:34:06	-0.06	0.00	-1.77	-0.08	-0.01	2.01

Notes:

In-Situ Inc.

Troll 9000 | Low-Flow System
11/07/13 | ISI Low-Flow Log

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - SUPP

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	58.71 [ft]
Pump placement from TOC	50.21 [ft]

Well Information:

Well Id	GWE-5M
Well diameter	2 [in]
Well total depth	58.1 [ft]
Depth to top of screen	47.71 [ft]
Screen length	120 [in]
Depth to Water	20.53 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	600 [mL]
Calculated Sample Rate	90 [sec]
Sample rate	90 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	11:50:30	16.23	6.87	1297.66	16.23	-0.07	-147.47
	11:52:03	16.24	6.88	1298.02	9.22	-0.07	-147.51
	11:53:36	16.24	6.88	1298.26	8.87	-0.07	-147.64
	11:55:09	16.25	6.88	1297.96	14.44	-0.07	-147.77
	11:56:42	16.25	6.88	1297.69	16.70	-0.07	-147.94
Variance in last 3 readings	11:53:36	0.00	0.00	0.24	-0.36	0.00	-0.13
	11:55:09	0.01	0.00	-0.30	5.57	0.00	-0.13
	11:56:42	0.00	0.00	-0.26	2.26	0.00	-0.17

Notes:

In-Situ Inc.

Troll 9000 | Low-Flow System
11/07/13 | ISI Low-Flow Log

Project Information:

Operator Name	dm sj
Company Name	URS Corporation
Project Name	Solutia WGK
Site Name	Quarterly Groundwater Sampling - SUPP

Pump Information:

Pump Model/Type	Proactive SS Monsoon
Tubing Type	LDPE
Tubing Diameter	0.19 [in]
Tubing Length	108.52 [ft]
Pump placement from TOC	102.52 [ft]

Well Information:

Well Id	GWE-5D
Well diameter	2 [in]
Well total depth	105.32 [ft]
Depth to top of screen	100.02 [ft]
Screen length	60 [in]
Depth to Water	20.91 [ft]

Pumping information:

Final pumping rate	400 [mL/min]
Flowcell volume	600 [mL]
Calculated Sample Rate	90 [sec]
Sample rate	90 [sec]
Stabilized drawdown	0 [in]

Low-Flow Sampling Stabilization Summary

	Time	Temp [C]	pH [pH]	Cond [µS/cm @25C]	Turb [NTU]	RDO [mg/L]	ORP [mV]
Stabilization Settings			+/-0.2	+/-0.1 +/-3 %	+/-1 +/-10 %	+/-0.2 +/-10 %	+/-20
Last 5 Readings	10:32:00	15.56	6.81	1743.14	14.65	-0.02	-148.23
	10:33:34	15.56	6.82	1743.78	11.84	-0.02	-150.80
	10:35:06	15.56	6.83	1745.38	10.33	-0.02	-148.57
	10:36:39	15.59	6.83	1745.16	11.43	-0.03	-148.74
	10:38:12	15.59	6.84	1745.35	9.98	-0.03	-148.83
Variance in last 3 readings	10:35:06	0.00	0.01	1.60	-1.51	0.00	2.22
	10:36:39	0.03	0.01	-0.23	1.10	0.00	-0.17
	10:38:12	0.00	0.01	0.19	-1.45	0.00	-0.09

Notes:

Appendix B

Chains-of-Custody

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/4/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) C			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260B	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1
BSA-MW-4D-1113	11/4/13	1345	G	Water	12		3	1	1	1	3	2	1		
BSA-MW-4D-F(0.2)-1113		1345	G	Water	2	X								1	1
CPA-MW-4D-1113		1150	G	Water	12		3	1	1	1	3	2	1		
CPA-MW-4D-F(0.2)-1113		1150	G	Water	2	X								1	1
BSA-MW-5D-1113		1530	G	Water	12		3	1	1	1	3	2	1		
BSA-MW-5D-F(0.2)-1113		1530	G	Water	2	X								1	1
CPA-MW-5D-1113		1010	G	Water	12		3	1	1	1	3	2	1		
CPA-MW-5D-F(0.2)-1113		1010	G	Water	2	X								1	1
BSA-MW-5D-1113-MS		1530	G	Water	3		3								
BSA-MW-5D-1113-MSD	↓		G	Water	3		3								
4Q13 LTM Trip Blank # 1	11/4/13	—	—	Water	2		2								
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other							2	4	1	1	1	3,1	2	4	2

680-95803 Chain of Custody

ple Specific Notes:

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *son B* ☐ *nown*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ■ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

680-95803

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	URS	11/4/13 1630			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
				TA SV	11/05/13 0952

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/5/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	**Analysis Turnaround Time**			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) C			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260B	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
BSA-MW-1S-1113	11/5/13	1020	G	Water	12		3	1	1	1	3	2	1			
BSA-MW-1S-F(0.2)-1113		1020	G	Water	2	X								1	1	
CPA-MW-1D-1113		1345	G	Water	12		3	1	1	1	3	2	1			
CPA-MW-1D-F(0.2)-1113		1345	G	Water	2	X								1	1	
CPA-MW-2D-1113		1205	G	Water	12		3	1	1	1	3	2	1			
CPA-MW-2D-1113-AD		1205	G	Water	3		3									
CPA-MW-2D-F(0.2)-1113		1205	G	Water	2	X								1	1	
CPA-MW-1D-1113-EB		1250	G	Water	3		3									
BSA-MW-3D-1113		1520	G	Water	12		3	1	1	1	3	2	1			
BSA-MW-3D-F(0.2)-1113		1520	G	Water	2	X								1	1	
4Q13 LTM Trip Blank # 2	11/5/13	—	—	Water	2		2									
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other							2	4	1	1	1	3,1	2	4	2	

680-95841 Chain of Custody

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *Poison B* ☐ *Unknown*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ■ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

2.6°C

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	URS	11/5/13 1615		TA SAV.	11/06/13 0937
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/6/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEX	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) C			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260B	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
BSA-MW-2D-1113	11/6/13	1155	G	Water	12		3	1	1	1	3	2	1			
BSA-MW-2D-F(0.2)-1113		1155	G	Water	2	X								1	1	
CPA-MW-3D-1113		1420	G	Water	12		3	1	1	1	3	2	1			
CPA-MW-3D-F(0.2)-1113		1420	G	Water	2	X								1	1	
~~BSA-MW-3D-1113~~			G	Water	12		3	1	1	1	3	2	1			
~~BSA-MW-3D-F(0.2)-1113~~			G	Water	2	X								1	1	
~~BSA-MW-3D-1113-EB~~ BSA-MW-2D-EB		1045	G	Water	3		3									
CPA-MW-3D-1113-AD		1420	G	Water	3		3									
			G	Water	~~12~~		~~3~~	~~1~~	~~1~~	~~1~~	~~3~~	~~2~~	~~1~~			
			G	Water	2	X								1	1	
4Q13 LTM Trip Blank # 3	11/6/13	—	—	Water	2		2									
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other							2	4	1	1	1	3,1	2	4	2	

680-95908 Chain of Custody

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *ison B* ☐ *nown*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ■ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	11/6/13 1515	[signature]	TA-SAV	11/07/13 10:01
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

680-95908 0.6°C

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/7/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	**Analysis Turnaround Time**			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) C			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260B	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1
GWE-5S-1113	11/7/13	1340	G	Water	12		3	1	1	1	3	2	1		
GWE-5S-F(0.2)-1113		1340	G	Water	2	X								1	1
GWE-5M-1113		1200	G	Water	12		3	1	1	1	3	2	1		
GWE-5M-F(0.2)-1113		1200	G	Water	2	X								1	1
GWE-5D-1113		1045	G	Water	12		3	1	1	1	3	2	1		
GWE-5D-F(0.2)-1113		1045	G	Water	2	X								1	1
GWE-3D-1113		1530	G	Water	12		3	1	1	1	3	2	1		
GWE-3D-F(0.2)-1113	↓	1530	G	Water	2	X								1	1
4Q13 LTM Trip Blank #4				Water	2		2								
							2	4	1	1	1	3,1	2	4	2

680-95983 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *ison B* ☐ *nown*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ■ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1.4°C
680-95983

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	URS	11/7/13/1620			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company: TA SL	Date/Time: 11/08/13 1001

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/8/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEX	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) C			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260B	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
ESL-MW-A-1113	11/8/13	1355	G	Water	12		3	1	1	1	3	2	1			
ESL-MW-A-F(0.2)-1113	"	1355	G	Water	2	X								1	1	
ESL-MW-C1-1113	"	1025	G	Water	12		3	1	1	1	3	2	1			
ESL-MW-C1-F(0.2)-1113	"	1025	G	Water	2	X								1	1	
ESL-MW-D1-1113	"	1210	G	Water	12		3	1	1	1	3	2	1			
ESL-MW-D1-F(0.2)-1113	↓	1210	G	Water	2	X								1	1	
			G	Water	12		3	1	1	1	3	2	1			
			G	Water	2	X								1	1	
4Q13 LTM Trip Blank # 5				Water	2		2									
							2	4	1	1	1	3,1	2	4	2	

680-96022 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification

☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *ison B* ☐ *known*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ *Return To Client* ■ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Daniel Matis	URS	11/8/13/1500		TA-SAV	11/09/13 0850
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

3.2°C

680-96022

Appendix C

Quality Assurance Report

QUALITY ASSURANCE REPORT

Solutia Inc.
W.G. Krummrich Facility
Sauget, Illinois

Long-Term Monitoring Program
4th Quarter 2013 Data Report

Prepared for

Solutia Inc.
575 Maryville Centre Drive
St. Louis, MO 63141

January 2014

URS Corporation
1001 Highland Plaza Drive West, Suite 300
St. Louis, MO 63110
(314) 429-0100
Project # 21562962

1.0 INTRODUCTION

This Quality Assurance Report presents the findings of a review of analytical data for groundwater samples collected in November of 2013 at the Solutia W.G. Krummrich plant as part of the 4th Quarter 2013 Long-Term Monitoring Program. The samples were collected by URS Corporation personnel and analyzed by TestAmerica Laboratories, Inc. located in Savannah, Georgia using USEPA methods, standard methods and USEPA SW-846 methodologies. Groundwater samples were tested for volatile organic compounds (VOCs), total and dissolved metals, dissolved gasses, and general chemistry parameters.

One hundred percent of the data were subjected to a Level III data quality review. The Level III data reviews were performed in order to confirm that the analytical data provided by TestAmerica Savannah were acceptable in quality for their intended use.

A total of twenty-one groundwater samples (seventeen investigative samples, two field duplicate pair, and one MS/MSD pair) were prepared and analyzed by TestAmerica Savannah for combinations of VOCs, dissolved gases, metals, and general chemistry. Additionally, two equipment blanks were collected and analyzed by TestAmerica. Five trip blank sets were included in the coolers that contained groundwater VOC samples and were analyzed for VOCs by USEPA SW-846 Method 8260B. These samples were analyzed as three sample delivery groups (SDGs) KPS097, KPS098, KPS099, KPS100, and KPS101, utilizing the following USEPA SW-846 Methods:

- Method 8260B for VOCs (Benzene, Chlorobenzene, 1,2-Dichlorobenzene, 1,3-Dichlorobenzene and 1,4-Dichlorobenzene)
- Method 6010C for total and dissolved iron and manganese

Samples were also analyzed for MNA parameters by the following methods:

- Method RSK-175 for Dissolved Gasses (Ethane, Ethylene, and Methane)
- USEPA Method 310.1 for Alkalinity and Free Carbon Dioxide
- USEPA Method 325.2 for Chloride
- USEPA Method 353.2 for Nitrogen, Nitrate
- USEPA Method 375.4 for Sulfate
- USEPA Method 415.1 for Total and Dissolved Organic Carbon

Samples were reviewed following procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008), USEPA Contract Laboratory Program National Functional Guidelines for Superfund Inorganic Data

Review (USEPA 2010) and the Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009).

The above guidelines provided the data review criteria. Additional quantitative criteria are given in the analytical methods. Qualifiers assigned by the data reviewer have been applied to the laboratory report. The qualifiers indicate data that did not meet acceptance criteria and corrective actions were not successful or not performed. The various qualifiers are explained in **Tables 1** and **2** below.

TABLE 1 Laboratory Data Qualifiers

Lab Qualifier	Definition
U	Analyte was not detected at or above the reporting limit.
*	LCS, LCSD, MS, MSD, MD or surrogate exceeds the control limits.
E	Result exceeded the calibration range, secondary dilution required.
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution will be flagged with a D.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Spike recovery exceeds upper or lower control limits.
F	MS, MSD or RPD exceeds upper or lower control limits.
P	The difference between the results of the two GC columns is greater than 40%
H	Sample was prepped or analyzed beyond the specified holding time.
B	Compound was found in the blank and sample.
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
^	ICV, CCV, ICB, CCB, ISA, ISB, CRI, CRA, DLCK or MRL standard: Instrument related QC exceeds the control limits.

TABLE 2 URS Data Qualifiers

	Definition
U	The analyte was analyzed for but was not detected.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Based on the criteria outlined, it is recommended that the results reported for these analyses are accepted for their intended use. Acceptable levels of accuracy, precision, and representativeness (based on MS/MSD, LCS, surrogate compounds and field duplicate results) were achieved for this data set, except where noted in this report.

The data review included evaluation of the following criteria:

Organics

- Receipt condition and sample holding times
- Laboratory method blanks, field equipment blanks and trip blank samples
- Surrogate spike recoveries
- Laboratory control sample (LCS) recoveries
- Matrix spike/matrix spike duplicate (MS/MSD) sample recoveries and relative percent difference (RPD) values
- Field duplicate results
- Results reported from dilutions
- Internal standard (IS) recoveries

Inorganics/General chemistry

- Receipt condition and sample holding times
- Laboratory method blank and field equipment blank samples
- Laboratory control sample (LCS) recoveries

- Matrix spike/matrix spike duplicate (MS/MSD) sample recoveries and matrix duplicate relative percent difference (RPD) values
- Field duplicate and laboratory duplicate results
- Results reported from dilutions

The following sections present the results of the data review.

2.0 RECEIPT CONDITION AND SAMPLE HOLDING TIMES

Sample holding time requirements for the analyses performed are presented in the methods and/or in the data review guidelines. Review of the sample collection, extraction and analysis dates involved comparing the chain-of-custody and the laboratory data summary forms for accuracy, consistency, and holding time compliance.

The cooler receipt forms for SDGs KPS097, KPS099, and KPS100 indicated that coolers were received by the laboratory at temperatures below the 4°C ± 2°C criteria. The samples were received in good condition; therefore no qualification of data was required.

The receipt forms for SDGs KPS097, KPS098, KPS099, indicated pH > 2 for total organic carbon, dissolved organic carbon, total metals, and/or dissolved metals in several samples; please see section 10.0 of this report for qualifications.

Additionally, two out of three VOA vials for samples BSA-MW-2D-1113 and CPA-MW-3D-1113 were received by the laboratory with headspace. The remaining vials without headspace contained sufficient sample to complete all requested analyses; therefore no qualification of data was required. Additionally, the laboratory indicated that the container identification information for sample BSA-MW-1S-1113 did not match the COC. URS contacted the laboratory; data were reported using the correct COC-designated sample IDs.

3.0 TRIP BLANKS, LABORATORY METHOD BLANK AND EQUIPMENT BLANK SAMPLES

Trip blank samples are used to assess VOC cross contamination of samples during shipment to the laboratory. Trip blanks were submitted with each cooler shipped containing VOC samples for a total of six trip blank sample sets. Trip blank results were non-detect.

Laboratory method blank samples evaluate the existence and magnitude of contamination problems resulting from laboratory activities. Laboratory method blank samples were analyzed at the method prescribed frequencies. Method blank results were non-detect.

Equipment blank samples are used to assess the effectiveness of equipment decontamination procedures. The equipment blank results were non-detect, except as summarized in the table below.

Blank ID	Parameter	Analyte	Concentration/Amount
CPA-MW-1D-1113-EB	VOCs	Benzene	20 ug/L
CPA-MW-1D-1113-EB	VOCs	Chlorobenzene	9.8 ug/L
CPA-MW-1D-1113-EB	VOCs	1,4-Dichlorobenzene	10 ug/L
BSA-MW-2D-EB	VOCs	Benzene	9.1 ug/L
BSA-MW-2D-EB	VOCs	Chlorobenzene	4.1 ug/L
BSA-MW-2D-EB	VOCs	1,2-Dichlorobenzene	5.1 ug/L
BSA-MW-2D-EB	VOCs	1,4-Dichlorobenzene	5.9 ug/L

Qualifications due to blank contamination are included in the table below. Due to the uncertainty of potential carryover, detections for benzene associated with CPA-MW-1D-1113-EB were qualified as estimated. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not required qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
BSA-MW-3D-1113	VOCs	Benzene	-	**J**

4.0 SURROGATE SPIKE RECOVERIES

Surrogate compounds are used to evaluate overall laboratory performance for sample preparation efficiency on a per sample basis. VOC samples were spiked with surrogate compounds during sample preparation. USEPA National Functional Guidelines for Superfund Organic Methods Data Review state how data is qualified, if surrogate spike recoveries do not meet acceptance criteria. Surrogate spike recoveries were within evaluation criteria.

5.0 LABORATORY CONTROL SAMPLE RECOVERIES

Groundwater laboratory control samples (LCS) were analyzed with each analytical batch to assess the accuracy of the analytical process. LCS recoveries were within evaluation criteria, except as summarized in the table below.

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/ RPD Criteria
LCS/LCSD 680-304581/4/5	VOCs	1,2-Dichlorobenzene	**76/79**	4	77-124/30

Analytical data that required qualification based on LCS data are included in the table below.

Sample ID	Parameter	Analyte	Qualification
ESL-MW-D1-1113	VOCs	1,2-Dichlorobenzene	**UJ**

6.0 MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) SAMPLES

MS/MSD samples are analyzed to assess the accuracy and precision of the analytical process on an analytical sample in a particular matrix. MS/MSD samples were collected at a frequency of one per 20 investigative samples in accordance with the work plan. URS Corporation submitted one MS/MSD sample set for 20 investigative samples, which met the work plan frequency requirement. The laboratory spiked and analyzed groundwater sample BSA-MW-5D-1113 for VOCs. Although not requested for MS/MSD analyses, the laboratory spiked groundwater samples CPA-MW-5D-F(0.2)-1113, BSA-MW-1S-1113, BSA-MW-2D-1113, GWE-5D-1113, and ESL-MW-A-1113 for various parameters as discussed further in the data review in **Appendix D**.

USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. Therefore, if recoveries were outside evaluation criteria due to matrix interference or abundance of analytes, no qualifiers were assigned unless these analytes had other quality control criteria outside evaluation criteria. MS/MSD recoveries outside evaluation criteria are summarized in the table below.

Groundwater samples spiked and analyzed as MS/MSDs and their respective recoveries were within evaluation criteria with the exceptions summarized in the following table.

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
BSA-MW-5D-1113	VOCs	Chlorobenzene	88/**78**	4	79-120/30
BSA-MW-1S-1113	General chemistry	Sulfate	**44/52**	17	75-125/30
ESL-MW-A-1113	General chemistry	Nitrate	110/**111**	1	90-110/10

Analytical data that required qualification based on MS/MSD data are included in the table below. USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. Analytical data reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
BSA-MW-1S-1113	General chemistry	Sulfate	**UJ**

7.0 FIELD DUPLICATE RESULTS

Field duplicate results are used to evaluate precision of the entire data collection activity, including sampling, analysis and site heterogeneity. When results for both duplicate and sample values are greater than five times the practical quantitation limit (PQL), satisfactory precision is indicated by an RPD less than or equal to 25 percent for aqueous samples. Where one or both of the results

of a field duplicate pair are reported at less than five times the PQL, satisfactory precision is indicated if the field duplicate results agree within two times the quantitation limit. Field duplicate results that do not meet these criteria may indicate unsatisfactory precision of the results.

Two pairs of field duplicate samples were collected for the seventeen investigative groundwater samples. This satisfies the requirement in the work plan (one per ten investigative samples or ten percent). Groundwater field duplicate RPDs were within evaluation criteria. No qualification of data was required.

8.0 INTERNAL STANDARD RESPONSES

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. IS areas must be within -50 percent to +100 percent for VOCs. The internal standards area responses for VOCs were verified for the data review. VOC IS responses met the criteria as described above for groundwater samples. No qualification of data was required.

9.0 RESULTS REPORTED FROM DILUTIONS

VOC, chloride, and sulfate results for groundwater samples were diluted due to high levels of target analytes. The diluted sample results for these analytes were reported for the associated samples.

10.0 ADDITIONAL QUALIFICATIONS

The following samples are qualified, as summarized below, due to pH > 2.

Sample ID	Parameter	Analyte	Qualification
CPA-MW-4D-1113	General chemistry	Total organic carbon	**J**
BSA-MW-5D-1113	General chemistry	Total organic carbon	**J**
BSA-MW-1S-F(0.2)-1113	General chemistry	Dissolved organic carbon	**J**
CPA-MW-1D-F(0.2)-1113	General chemistry	Dissolved organic carbon	**J**
BSA-MW-2D-1113	Total metals	Iron	**J**
BSA-MW-2D-1113	Total metals	Manganese	**J**
BSA-MW-2D-1113	General chemistry	Total organic carbon	**J**
BSA-MW-2D-F(0.2)-1113	Dissolved metals	Iron	**J**
BSA-MW-2D-F(0.2)-1113	Dissolved metals	Manganese	**J**
BSA-MW-2D-F(0.2)-1113	General chemistry	Dissolved organic carbon	**J**
CPA-MW-3D-1113	Total metals	Iron	**J**
CPA-MW-3D-1113	Total metals	Manganese	**J**
CPA-MW-3D-F(0.2)-1113	Dissolved metals	Iron	**J**
CPA-MW-3D-F(0.2)-1113	Dissolved metals	Manganese	**J**
CPA-MW-3D-F(0.2)-1113	General chemistry	Dissolved organic carbon	**J**

Appendix D

Groundwater Analytical Results

(with Data Review Reports)

Solutia Krummrich Data Review
WGK LTM 4Q13

Laboratory SDG: KPS097

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 12/4/2013

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund Inorganic Data Review 2010

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009)

Sample Identification	
BSA-MW-4D-1113	BSA-MW-4D-F(0.2)-1113
CPA-MW-4D-1113	CPA-MW-4D-F(0.2)-1113
BSA-MW-5D-1113	BSA-MW-5D-F(0.2)-1113
CPA-MW-5D-1113	CPA-MW-5D-F(0.2)-1113
4Q13 LTM Trip Blank #1	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated chlorobenzene MS/MSD recoveries were outside evaluation criteria for sample BSA-MW-5D-1113. Dissolved iron MS/MSD recoveries in sample CPA-MW-5D-F(0.2)-1113 could not be evaluated because the sample concentrations were greater than four times (4X) the matrix spike concentration. Samples were diluted due to high levels of target analytes. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that one of one coolers was received by the laboratory at a temperature of 1.4°C which is outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore no qualification of data was required. The pH for total organic carbon in samples CPA-MW-4D-1113 and BSA-MW-5D-1113 was out of range upon receipt; please see section 11.0 of this review for qualifications.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, sample BSA-MW-5D-1113 was spiked and analyzed for VOCs. Although not requested, sample CPA-MW-5D-F(0.2)-1113 was spiked and analyzed for dissolved metals.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
BSA-MW-5D-1113	VOCs	Chlorobenzene	88/**78**	4	79-120/30

USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone and LCS recoveries were within evaluation criteria. Dissolved iron MS/MSD recoveries in sample CPA-MW-5D-F(0.2)-1113 could not be evaluated because the sample concentrations were greater than four times (4X) the matrix spike concentration. No qualification of data was required.

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

Yes, sample BSA-MW-4D-1113 was duplicated and analyzed for alkalinity and chloride. Sample BSA-MW-5D-1113 was duplicated and analyzed for chloride and nitrate. Sample BSA-MW-5D-F(0.2)-1113 was duplicated and analyzed for dissolved organic carbon.

Were laboratory duplicate sample RPDs within criteria?

Yes

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

11.0 Additional Qualifications

Were additional qualifications applied?

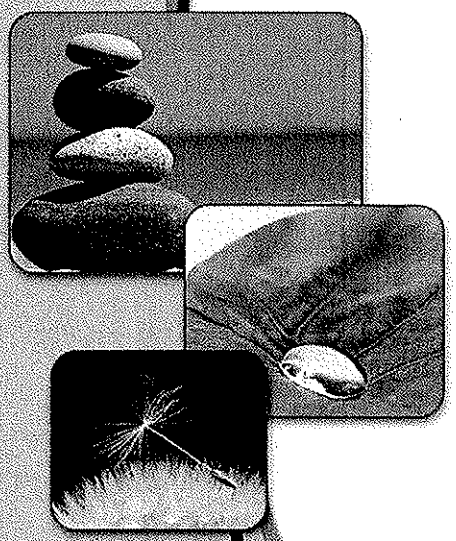
Yes, the following samples are qualified, as summarized below, due to pH >2.

Sample ID	Parameter	Analyte	Qualification
CPA-MW-4D-1113	General chemistry	Total organic carbon	**J**
BSA-MW-5D-1113	General chemistry	Total organic carbon	**J**

SDG KPS097

Results of Samples from Monitoring Wells:

BSA-MW-4D
BSA-MW-5D
CPA-MW-4D
CPA-MW-5D



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-95803-1
TestAmerica Sample Delivery Group: KPS097
Client Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
11/22/2013 11:16:48 AM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

Reviewed on
DEC 04 2013

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

DEC 0 4 2013

Job ID: 680-95803-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 4Q13 NOV 2013

Report Number: 680-95803-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 11/5/2013 9:52 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4° C.

Except:

Method(s) 415.1: The following sample(s) were collected in properly preserved vials, however, the pH was outside the required criteria when verified by the laboratory: BSA-MW-5D-1113 (680-95803-5), CPA-MW-4D-1113 (680-95803-3).

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples BSA-MW-4D-1113 (680-95803-1), CPA-MW-4D-1113 (680-95803-3), BSA-MW-5D-1113 (680-95803-5), CPA-MW-5D-1113 (680-95803-7) and 4Q13 LTM Trip Blank #1 (680-95803-9) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/13/2013.

The matrix spike duplicate (MSD) recoveries for batch 303240 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

Refer to the QC report for details.

Samples BSA-MW-4D-1113 (680-95803-1)[25X], CPA-MW-4D-1113 (680-95803-3)[2X], BSA-MW-5D-1113 (680-95803-5)[5X] and CPA-MW-5D-1113 (680-95803-7)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the volatiles analysis.

All other quality control parameters were within the acceptance limits.

DISSOLVED GASES
Samples BSA-MW-4D-1113 (680-95803-1), CPA-MW-4D-1113 (680-95803-3), BSA-MW-5D-1113 (680-95803-5) and CPA-MW-5D-1113 (680-95803-7) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 11/08/2013.

No difficulties were encountered during the dissolved gases analysis.

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TestAmerica Savannah

Job ID: 680-95803-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

All quality control parameters were within the acceptance limits.

METALS (ICP)
Samples BSA-MW-4D-F(0.2)-1113 (680-95803-2), CPA-MW-4D-F(0.2)-1113 (680-95803-4), BSA-MW-5D-F(0.2)-1113 (680-95803-6) and CPA-MW-5D-F(0.2)-1113 (680-95803-8) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/06/2013 and analyzed on 11/07/2013.

Due to the high concentration of iron, the matrix spike / matrix spike duplicate (MS/MSD) for batch 680-302028 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

METALS (ICP)
Samples BSA-MW-4D-1113 (680-95803-1), CPA-MW-4D-1113 (680-95803-3), BSA-MW-5D-1113 (680-95803-5) and CPA-MW-5D-1113 (680-95803-7) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/06/2013 and analyzed on 11/07/2013.

Due to the high concentration of iron, the matrix spike / matrix spike duplicate (MS/MSD) for batch 680-302028 could not be evaluated for accuracy and precision. The associated laboratory control sample (LCS) met acceptance criteria.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

ALKALINITY
Samples BSA-MW-4D-1113 (680-95803-1), CPA-MW-4D-1113 (680-95803-3), BSA-MW-5D-1113 (680-95803-5) and CPA-MW-5D-1113 (680-95803-7) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 11/13/2013 and 11/14/2013.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

CHLORIDE
Samples BSA-MW-4D-1113 (680-95803-1), CPA-MW-4D-1113 (680-95803-3), BSA-MW-5D-1113 (680-95803-5) and CPA-MW-5D-1113 (680-95803-7) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 11/11/2013 and 11/13/2013.

Samples CPA-MW-4D-1113 (680-95803-3)[5X], BSA-MW-5D-1113 (680-95803-5)[5X] and CPA-MW-5D-1113 (680-95803-7)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

NITRATE-NITRITE AS NITROGEN
Samples BSA-MW-4D-1113 (680-95803-1), CPA-MW-4D-1113 (680-95803-3), BSA-MW-5D-1113 (680-95803-5) and CPA-MW-5D-1113 (680-95803-7) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 11/05/2013.

No difficulties were encountered during the nitrate-nitrite analysis.

All quality control parameters were within the acceptance limits.

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TestAmerica Savannah

Job ID: 680-95803-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

SULFATE
Samples BSA-MW-4D-1113 (680-95803-1), CPA-MW-4D-1113 (680-95803-3), BSA-MW-5D-1113 (680-95803-5) and CPA-MW-5D-1113 (680-95803-7) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 11/06/2013.

Samples BSA-MW-4D-1113 (680-95803-1)[10X] and CPA-MW-5D-1113 (680-95803-7)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON
Samples BSA-MW-4D-1113 (680-95803-1), CPA-MW-4D-1113 (680-95803-3), BSA-MW-5D-1113 (680-95803-5) and CPA-MW-5D-1113 (680-95803-7) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 11/09/2013.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED ORGANIC CARBON (DOC)
Samples BSA-MW-4D-F(0.2)-1113 (680-95803-2), CPA-MW-4D-F(0.2)-1113 (680-95803-4), BSA-MW-5D-F(0.2)-1113 (680-95803-6) and CPA-MW-5D-F(0.2)-1113 (680-95803-8) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 11/13/2013.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

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TestAmerica Savannah

Sample Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-95803-1	BSA-MW-4D-1113	Water	11/04/13 13:45	11/05/13 09:52
680-95803-2	BSA-MW-4D-F(0.2)-1113	Water	11/04/13 13:45	11/05/13 09:52
680-95803-3	CPA-MW-4D-1113	Water	11/04/13 11:50	11/05/13 09:52
680-95803-4	CPA-MW-4D-F(0.2)-1113	Water	11/04/13 11:50	11/05/13 09:52
680-95803-5	BSA-MW-5D-1113	Water	11/04/13 15:30	11/05/13 09:52
680-95803-6	BSA-MW-5D-F(0.2)-1113	Water	11/04/13 15:30	11/05/13 09:52
680-95803-7	CPA-MW-5D-1113	Water	11/04/13 10:10	11/05/13 09:52
680-95803-8	CPA-MW-5D-F(0.2)-1113	Water	11/04/13 10:10	11/05/13 09:52
680-95803-9	4Q13 LTM Trip Blank #1	Water	11/04/13 00:00	11/05/13 09:52

DEC 0 4 2013

TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

DEC 0 4 2013

TestAmerica Savannah

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F	MS/MSD Recovery and/or RPD exceeds the control limits

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

DEC 0 4 2013

TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Client Sample ID: BSA-MW-4D-1113 — Lab Sample ID: 680-95803-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	130		25		ug/L	25		8260B	Total/NA
Chlorobenzene	2500		25		ug/L	25		8260B	Total/NA
1,4-Dichlorobenzene	71		25		ug/L	25		8260B	Total/NA
Ethane	3.8		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	840		0.58		ug/L	1		RSK-175	Total/NA
Iron	7.3		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.55		0.010		mg/L	1		6010C	Total Recoverable
Chloride	94		1.0		mg/L	1		325.2	Total/NA
Sulfate	110		50		mg/L	10		375.4	Total/NA
Total Organic Carbon	4.0		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	460		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	30		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-4D-F(0.2)-1113 — Lab Sample ID: 680-95803-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	7.0		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.53		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.4		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-4D-1113 — Lab Sample ID: 680-95803-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	47		2.0		ug/L	2		8260B	Total/NA
Chlorobenzene	250		2.0		ug/L	2		8260B	Total/NA
1,2-Dichlorobenzene	5.9		2.0		ug/L	2		8260B	Total/NA
1,4-Dichlorobenzene	3.4		2.0		ug/L	2		8260B	Total/NA
Ethane	12		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	9800		0.58		ug/L	1		RSK-175	Total/NA
Iron	12		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.30		0.010		mg/L	1		6010C	Total Recoverable
Chloride	170		5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	7.3	J	1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	620		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	43		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-4D-F(0.2)-1113 — Lab Sample ID: 680-95803-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	11		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.29		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	8.2		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-5D-1113 — Lab Sample ID: 680-95803-5

This Detection Summary does not include radiochemical test results.

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Client Sample ID: BSA-MW-5D-1113 (Continued)

Lab Sample ID: 680-95803-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	440		5.0		ug/L	5		8260B	Total/NA
Ethane	15		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	13000		0.58		ug/L	1		RSK-175	Total/NA
Iron	12		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.28		0.010		mg/L	1		6010C	Total Recoverable
Chloride	290		5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	6.6	J	1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	640		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	49		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-5D-F(0.2)-1113

Lab Sample ID: 680-95803-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	12		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.28		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	7.3		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-5D-1113

Lab Sample ID: 680-95803-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	1900		20		ug/L	20		8260B	Total/NA
Ethane	1.2		1.1		ug/L	1		RSK-175	Total/NA
Methane	130		0.58		ug/L	1		RSK-175	Total/NA
Iron	21		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.62		0.010		mg/L	1		6010C	Total Recoverable
Chloride	210		5.0		mg/L	5		325.2	Total/NA
Sulfate	120		50		mg/L	10		375.4	Total/NA
Total Organic Carbon	3.6		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	550		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	72		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-5D-F(0.2)-1113

Lab Sample ID: 680-95803-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	21		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.62		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.7		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: 4Q13 LTM Trip Blank #1

Lab Sample ID: 680-95803-9

No Detections.

This Detection Summary does not include radiochemical test results.

DEC 0 4 2013

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Client Sample ID: BSA-MW-4D-1113
Date Collected: 11/04/13 13:45
Date Received: 11/05/13 09:52

Lab Sample ID: 680-95803-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**130**		25		ug/L			11/13/13 15:37	25
Chlorobenzene	**2500**		25		ug/L			11/13/13 15:37	25
1,2-Dichlorobenzene	25	U	25		ug/L			11/13/13 15:37	25
1,3-Dichlorobenzene	25	U	25		ug/L			11/13/13 15:37	25
1,4-Dichlorobenzene	**71**		25		ug/L			11/13/13 15:37	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*70 - 130*		*11/13/13 15:37*	*25*
Dibromofluoromethane	*87*		*70 - 130*		*11/13/13 15:37*	*25*
Toluene-d8 (Surr)	*96*		*70 - 130*		*11/13/13 15:37*	*25*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**3.8**		1.1		ug/L			11/08/13 15:31	1
Ethylene	1.0	U	1.0		ug/L			11/08/13 15:31	1
Methane (TCD)	**840**		0.58		ug/L			11/08/13 15:31	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**7.3**		0.050		mg/L		11/06/13 17:15	11/07/13 19:38	1
Manganese	**0.55**		0.010		mg/L		11/06/13 17:15	11/07/13 19:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**94**		1.0		mg/L			11/11/13 13:00	1
Nitrate as N	0.050	U	0.050		mg/L			11/05/13 16:46	1
Sulfate	**110**		50		mg/L			11/06/13 11:54	10
Total Organic Carbon	**4.0**		1.0		mg/L			11/09/13 19:59	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**480**		5.0		mg/L			11/13/13 12:24	1
Carbon Dioxide, Free	**30**		5.0		mg/L			11/13/13 12:24	1

DEC 0 4 2013

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Client Sample ID: BSA-MW-4D-F(0.2)-1113
Date Collected: 11/04/13 13:45
Date Received: 11/05/13 09:52

Lab Sample ID: 680-95803-2
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	7.0		0.050		mg/L		11/06/13 17:15	11/07/13 19:42	1
Manganese, Dissolved	0.53		0.010		mg/L		11/06/13 17:15	11/07/13 19:42	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.4		1.0		mg/L			11/13/13 16:01	1

DEC 0 4 2013

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Client Sample ID: CPA-MW-4D-1113

Lab Sample ID: 680-95803-3

Date Collected: 11/04/13 11:50
Date Received: 11/05/13 09:52

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**47**		2.0		ug/L			11/13/13 16:07	2
Chlorobenzene	**250**		2.0		ug/L			11/13/13 16:07	2
1,2-Dichlorobenzene	**5.9**		2.0		ug/L			11/13/13 16:07	2
1,3-Dichlorobenzene	2.0	U	2.0		ug/L			11/13/13 16:07	2
1,4-Dichlorobenzene	**3.4**		2.0		ug/L			11/13/13 16:07	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*111*		*70 - 130*		*11/13/13 16:07*	*2*
Dibromofluoromethane	*86*		*70 - 130*		*11/13/13 16:07*	*2*
Toluene-d8 (Surr)	*100*		*70 - 130*		*11/13/13 16:07*	*2*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**12**		1.1		ug/L			11/08/13 15:18	1
Ethylene	1.0	U	1.0		ug/L			11/08/13 15:18	1
Methane (TCD)	**9800**		0.58		ug/L			11/08/13 15:18	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**12**		0.050		mg/L		11/06/13 17:15	11/07/13 19:47	1
Manganese	**0.30**		0.010		mg/L		11/06/13 17:15	11/07/13 19:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**170**		5.0		mg/L			11/11/13 13:26	5
Nitrate as N	0.050	U	0.050		mg/L			11/05/13 16:31	1
Sulfate	5.0	U	5.0		mg/L			11/06/13 11:33	1
Total Organic Carbon	**7.3**	J	1.0		mg/L			11/09/13 20:13	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**620**		5.0		mg/L			11/13/13 12:10	1
Carbon Dioxide, Free	**43**		5.0		mg/L			11/13/13 12:10	1

DEC 04 2013

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Client Sample ID: CPA-MW-4D-F(0.2)-1113
Date Collected: 11/04/13 11:50
Date Received: 11/05/13 09:52

Lab Sample ID: 680-95803-4
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	11		0.050		mg/L		11/06/13 17:15	11/07/13 19:52	1
Manganese, Dissolved	0.29		0.010		mg/L		11/06/13 17:15	11/07/13 19:52	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	8.2		1.0		mg/L			11/13/13 16:15	1

DEC 04 2013

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Client Sample ID: BSA-MW-5D-1113

Lab Sample ID: 680-95803-5

Date Collected: 11/04/13 15:30
Matrix: Water
Date Received: 11/05/13 09:52

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	5.0	U	5.0		ug/L			11/13/13 16:36	5
Chlorobenzene	**440**		5.0		ug/L			11/13/13 16:36	5
1,2-Dichlorobenzene	5.0	U	5.0		ug/L			11/13/13 16:36	5
1,3-Dichlorobenzene	5.0	U	5.0		ug/L			11/13/13 16:36	5
1,4-Dichlorobenzene	5.0	U	5.0		ug/L			11/13/13 16:36	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*112*		*70 - 130*		*11/13/13 16:36*	*5*
Dibromofluoromethane	*97*		*70 - 130*		*11/13/13 16:36*	*5*
Toluene-d8 (Surr)	*107*		*70 - 130*		*11/13/13 16:36*	*5*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**15**		1.1		ug/L			11/08/13 15:05	1
Ethylene	1.0	U	1.0		ug/L			11/08/13 15:05	1
Methane (TCD)	**13000**		0.58		ug/L			11/08/13 15:05	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**12**		0.050		mg/L		11/06/13 17:15	11/07/13 19:56	1
Manganese	**0.28**		0.010		mg/L		11/06/13 17:15	11/07/13 19:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**290**		5.0		mg/L			11/13/13 14:49	5
Nitrate as N	0.050	U	0.050		mg/L			11/05/13 16:35	1
Sulfate	5.0	U	5.0		mg/L			11/06/13 11:33	1
Total Organic Carbon	**6.6**	J	1.0		mg/L			11/09/13 20:27	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**640**		5.0		mg/L			11/13/13 12:00	1
Carbon Dioxide, Free	**49**		5.0		mg/L			11/13/13 12:00	1

DEC 04 2013

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Client Sample ID: BSA-MW-5D-F(0.2)-1113
Date Collected: 11/04/13 15:30
Date Received: 11/05/13 09:52

Lab Sample ID: 680-95803-6
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	12		0.050		mg/L		11/06/13 17:15	11/07/13 20:01	1
Manganese, Dissolved	0.28		0.010		mg/L		11/06/13 17:15	11/07/13 20:01	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	7.3		1.0		mg/L			11/13/13 17:01	1

DEC 04 2013

TestAmerica Savannah

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Client Sample ID: CPA-MW-5D-1113
Date Collected: 11/04/13 10:10
Date Received: 11/05/13 09:52

Lab Sample ID: 680-95803-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	20	U	20		ug/L			11/13/13 17:06	20
Chlorobenzene	**1900**		20		ug/L			11/13/13 17:06	20
1,2-Dichlorobenzene	20	U	20		ug/L			11/13/13 17:06	20
1,3-Dichlorobenzene	20	U	20		ug/L			11/13/13 17:06	20
1,4-Dichlorobenzene	20	U	20		ug/L			11/13/13 17:06	20

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*114*		*70 - 130*		*11/13/13 17:06*	*20*
Dibromofluoromethane	*92*		*70 - 130*		*11/13/13 17:06*	*20*
Toluene-d8 (Surr)	*104*		*70 - 130*		*11/13/13 17:06*	*20*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**1.2**		1.1		ug/L			11/08/13 14:52	1
Ethylene	1.0	U	1.0		ug/L			11/08/13 14:52	1
Methane	**130**		0.58		ug/L			11/08/13 14:52	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**21**		0.050		mg/L		11/06/13 17:15	11/07/13 20:05	1
Manganese	**0.62**		0.010		mg/L		11/06/13 17:15	11/07/13 20:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**210**		5.0		mg/L			11/13/13 14:49	5
Nitrate as N	0.050	U	0.050		mg/L			11/05/13 16:34	1
Sulfate	**120**		50		mg/L			11/06/13 11:54	10
Total Organic Carbon	**3.6**		1.0		mg/L			11/09/13 20:42	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**550**		5.0		mg/L			11/14/13 16:50	1
Carbon Dioxide, Free	**72**		5.0		mg/L			11/14/13 16:50	1

DEC 04 2013

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Client Sample ID: CPA-MW-5D-F(0.2)-1113
Date Collected: 11/04/13 10:10
Date Received: 11/05/13 09:52

Lab Sample ID: 680-95803-8
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	21		0.050		mg/L		11/06/13 17:15	11/07/13 20:10	1
Manganese, Dissolved	0.62		0.010		mg/L		11/06/13 17:15	11/07/13 20:10	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.7		1.0		mg/L			11/13/13 17:28	1

DEC 04 2013

TestAmerica Savannah

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Client Sample ID: 4Q13 LTM Trip Blank #1
Date Collected: 11/04/13 00:00
Date Received: 11/05/13 09:52

Lab Sample ID: 680-95803-9
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/13/13 13:02	1
Chlorobenzene	1.0	U	1.0		ug/L			11/13/13 13:02	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 13:02	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 13:02	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 13:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*112*		*70 - 130*		*11/13/13 13:02*	*1*
Dibromofluoromethane	*105*		*70 - 130*		*11/13/13 13:02*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*11/13/13 13:02*	*1*

DEC 04 2013

TestAmerica Savannah

Surrogate Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
680-95803-1	BSA-MW-4D-1113	95	87	96
680-95803-3	CPA-MW-4D-1113	111	86	100
680-95803-5	BSA-MW-5D-1113	112	97	107
680-95803-5 MS	BSA-MW-5D-1113-MS	107	111	103
680-95803-5 MSD	BSA-MW-5D-1113-MSD	93	106	99
680-95803-7	CPA-MW-5D-1113	114	92	104
680-95803-9	4Q13 LTM Trip Blank #1	112	105	97
LCS 680-302958/4	Lab Control Sample	100	107	98
LCS 680-303240/4	Lab Control Sample	106	109	101
LCSD 680-302958/5	Lab Control Sample Dup	107	100	104
LCSD 680-303240/12	Lab Control Sample Dup	105	104	102
MB 680-302958/8	Method Blank	108	106	92
MB 680-303240/8	Method Blank	92	107	90

Surrogate Legend

BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

DEC 04 2013

TestAmerica Savannah

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-302958/8
Matrix: Water
Analysis Batch: 302958

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/13/13 12:33	1
Chlorobenzene	1.0	U	1.0		ug/L			11/13/13 12:33	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 12:33	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 12:33	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 12:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*108*		*70 - 130*		*11/13/13 12:33*	*1*
Dibromofluoromethane	*106*		*70 - 130*		*11/13/13 12:33*	*1*
Toluene-d8 (Surr)	*92*		*70 - 130*		*11/13/13 12:33*	*1*

Lab Sample ID: LCS 680-302958/4
Matrix: Water
Analysis Batch: 302958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.4		ug/L		97	74 - 123
Chlorobenzene	50.0	55.7		ug/L		111	79 - 120
1,2-Dichlorobenzene	50.0	46.9		ug/L		94	77 - 124
1,3-Dichlorobenzene	50.0	49.5		ug/L		99	79 - 123
1,4-Dichlorobenzene	50.0	48.7		ug/L		97	76 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*100*		*70 - 130*
Dibromofluoromethane	*107*		*70 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 680-302958/5
Matrix: Water
Analysis Batch: 302958

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	49.4		ug/L		99	74 - 123	2	30
Chlorobenzene	50.0	56.1		ug/L		112	79 - 120	1	30
1,2-Dichlorobenzene	50.0	54.0		ug/L		108	77 - 124	14	30
1,3-Dichlorobenzene	50.0	55.7		ug/L		111	79 - 123	12	30
1,4-Dichlorobenzene	50.0	53.9		ug/L		108	76 - 124	10	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*107*		*70 - 130*
Dibromofluoromethane	*100*		*70 - 130*
Toluene-d8 (Surr)	*104*		*70 - 130*

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Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-303240/8
Matrix: Water
Analysis Batch: 303240

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/14/13 15:28	1
Chlorobenzene	1.0	U	1.0		ug/L			11/14/13 15:28	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/14/13 15:28	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/14/13 15:28	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/14/13 15:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*92*		*70 - 130*		*11/14/13 15:28*	*1*
Dibromofluoromethane	*107*		*70 - 130*		*11/14/13 15:28*	*1*
Toluene-d8 (Surr)	*90*		*70 - 130*		*11/14/13 15:28*	*1*

Lab Sample ID: LCS 680-303240/4
Matrix: Water
Analysis Batch: 303240

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	45.1		ug/L		90	74 - 123
Chlorobenzene	50.0	55.6		ug/L		111	79 - 120
1,2-Dichlorobenzene	50.0	59.1		ug/L		118	77 - 124
1,3-Dichlorobenzene	50.0	59.8		ug/L		120	79 - 123
1,4-Dichlorobenzene	50.0	60.8		ug/L		122	76 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*106*		*70 - 130*
Dibromofluoromethane	*109*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 680-303240/12
Matrix: Water
Analysis Batch: 303240

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	43.4		ug/L		87	74 - 123	4	30
Chlorobenzene	50.0	53.7		ug/L		107	79 - 120	3	30
1,2-Dichlorobenzene	50.0	58.0		ug/L		116	77 - 124	2	30
1,3-Dichlorobenzene	50.0	59.5		ug/L		119	79 - 123	1	30
1,4-Dichlorobenzene	50.0	59.6		ug/L		119	76 - 124	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*105*		*70 - 130*
Dibromofluoromethane	*104*		*70 - 130*
Toluene-d8 (Surr)	*102*		*70 - 130*

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Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-95803-5 MS
Matrix: Water
Analysis Batch: 303240

Client Sample ID: BSA-MW-5D-1113-MS
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	5.0	U	250	230		ug/L		91	74 - 123
Chlorobenzene	440		250	656		ug/L		88	79 - 120
1,2-Dichlorobenzene	5.0	U	250	291		ug/L		115	77 - 124
1,3-Dichlorobenzene	5.0	U	250	292		ug/L		117	79 - 123
1,4-Dichlorobenzene	5.0	U	250	294		ug/L		116	76 - 124

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
4-Bromofluorobenzene	*107*		*70 - 130*
Dibromofluoromethane	*111*		*70 - 130*
Toluene-d8 (Surr)	*103*		*70 - 130*

Lab Sample ID: 680-95803-5 MSD
Matrix: Water
Analysis Batch: 303240

Client Sample ID: BSA-MW-5D-1113-MSD
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	5.0	U	250	217		ug/L		86	74 - 123	6	30
Chlorobenzene	440		250	632	F	ug/L		78	79 - 120	4	30
1,2-Dichlorobenzene	5.0	U	250	250		ug/L		98	77 - 124	15	30
1,3-Dichlorobenzene	5.0	U	250	253		ug/L		101	79 - 123	14	30
1,4-Dichlorobenzene	5.0	U	250	255		ug/L		101	76 - 124	14	30

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene	*93*		*70 - 130*
Dibromofluoromethane	*106*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-302324/3
Matrix: Water
Analysis Batch: 302324

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/08/13 11:43	1
Ethylene	1.0	U	1.0		ug/L			11/08/13 11:43	1
Methane	0.58	U	0.58		ug/L			11/08/13 11:43	1
Methane (TCD)	0.58	U	0.58		ug/L			11/08/13 11:43	1

Lab Sample ID: LCS 680-302324/10
Matrix: Water
Analysis Batch: 302324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1920		ug/L		100	75 - 125

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Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 680-302324/8
Matrix: Water
Analysis Batch: 302324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	263		ug/L		91	75 - 125
Ethylene	269	227		ug/L		84	75 - 125
Methane	154	136		ug/L		88	75 - 125

Lab Sample ID: LCSD 680-302324/11
Matrix: Water
Analysis Batch: 302324

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1900		ug/L		99	75 - 125	1	30

Lab Sample ID: LCSD 680-302324/9
Matrix: Water
Analysis Batch: 302324

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	307		ug/L		106	75 - 125	16	30
Ethylene	269	293		ug/L		109	75 - 125	25	30
Methane	154	154		ug/L		100	75 - 125	13	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-302028/1-A
Matrix: Water
Analysis Batch: 302301

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 302028

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		11/06/13 17:15	11/07/13 19:29	1
Iron, Dissolved	0.050	U	0.050		mg/L		11/06/13 17:15	11/07/13 19:29	1
Manganese	0.010	U	0.010		mg/L		11/06/13 17:15	11/07/13 19:29	1
Manganese, Dissolved	0.010	U	0.010		mg/L		11/06/13 17:15	11/07/13 19:29	1

Lab Sample ID: LCS 680-302028/2-A
Matrix: Water
Analysis Batch: 302301

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 302028

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	4.96		mg/L		99	75 - 125
Iron, Dissolved	5.00	4.96		mg/L		99	75 - 125
Manganese	0.500	0.506		mg/L		101	75 - 125
Manganese, Dissolved	0.500	0.506		mg/L		101	75 - 125

Lab Sample ID: 680-95803-8 MS
Matrix: Water
Analysis Batch: 302301

Client Sample ID: CPA-MW-5D-F(0.2)-1113
Prep Type: Dissolved
Prep Batch: 302028

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	21		5.00	25.7	4	mg/L		99	75 - 125
Iron, Dissolved	21		5.00	25.7	4	mg/L		99	75 - 125

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Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-95803-8 MS
Matrix: Water
Analysis Batch: 302301

Client Sample ID: CPA-MW-5D-F(0.2)-1113
Prep Type: Dissolved
Prep Batch: 302028

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Manganese	0.62		0.500	1.12		mg/L		102	75 - 125
Manganese, Dissolved	0.62		0.500	1.12		mg/L		102	75 - 125

Lab Sample ID: 680-95803-8 MSD
Matrix: Water
Analysis Batch: 302301

Client Sample ID: CPA-MW-5D-F(0.2)-1113
Prep Type: Dissolved
Prep Batch: 302028

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	21		5.00	26.4	4	mg/L		112	75 - 125	3	20
Iron, Dissolved	21		5.00	26.4	4	mg/L		112	75 - 125	3	20
Manganese	0.62		0.500	1.16		mg/L		108	75 - 125	3	20
Manganese, Dissolved	0.62		0.500	1.16		mg/L		108	75 - 125	3	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-303062/5
Matrix: Water
Analysis Batch: 303062

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			11/13/13 11:16	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			11/13/13 11:16	1

Lab Sample ID: LCS 680-303062/6
Matrix: Water
Analysis Batch: 303062

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	210		mg/L		84	80 - 120

Lab Sample ID: LCSD 680-303062/32
Matrix: Water
Analysis Batch: 303062

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	229		mg/L		92	80 - 120	9	30

Lab Sample ID: 680-95803-1 DU
Matrix: Water
Analysis Batch: 303062

Client Sample ID: BSA-MW-4D-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	480		511		mg/L		6	30
Carbon Dioxide, Free	30		30.9		mg/L		2	30

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Method: 310.1 - Alkalinity (Continued)

Lab Sample ID: MB 680-303380/5
Matrix: Water
Analysis Batch: 303380

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			11/14/13 14:47	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			11/14/13 14:47	1

Lab Sample ID: LCS 680-303380/6
Matrix: Water
Analysis Batch: 303380

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	224		mg/L		90	80 - 120

Lab Sample ID: LCSD 680-303380/32
Matrix: Water
Analysis Batch: 303380

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	220		mg/L		88	80 - 120	2	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-302724/35
Matrix: Water
Analysis Batch: 302724

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			11/11/13 13:35	1

Lab Sample ID: LCS 680-302724/1
Matrix: Water
Analysis Batch: 302724

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.0		mg/L		100	85 - 115

Lab Sample ID: 680-95803-1 DU
Matrix: Water
Analysis Batch: 302724

Client Sample ID: BSA-MW-4D-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	94		93.3		mg/L		0.4	30

Lab Sample ID: MB 680-303119/45
Matrix: Water
Analysis Batch: 303119

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			11/13/13 15:15	1

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Method: 325.2 - Chloride (Continued)

Lab Sample ID: LCS 680-303119/7
Matrix: Water
Analysis Batch: 303119

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.0		mg/L		100	85 - 115

Lab Sample ID: 680-95803-5 DU
Matrix: Water
Analysis Batch: 303119

Client Sample ID: BSA-MW-5D-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Chloride	290		284		mg/L		2	30

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-301807/13
Matrix: Water
Analysis Batch: 301807

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			11/05/13 16:14	1

Lab Sample ID: LCS 680-301807/14
Matrix: Water
Analysis Batch: 301807

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.497	0.533		mg/L		107	90 - 110
Nitrate Nitrite as N	0.997	1.04		mg/L		104	90 - 110
Nitrite as N	0.500	0.503		mg/L		101	90 - 110

Lab Sample ID: 680-95803-5 DU
Matrix: Water
Analysis Batch: 301807

Client Sample ID: BSA-MW-5D-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Nitrate as N	0.050	U	0.050	U	mg/L		NC	10

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-301979/39
Matrix: Water
Analysis Batch: 301979

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			11/06/13 14:28	1

Lab Sample ID: LCS 680-301979/7
Matrix: Water
Analysis Batch: 301979

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.0		mg/L		100	75 - 125

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Method: 415.1 - DOC

Lab Sample ID: MB 680-303261/6
Matrix: Water
Analysis Batch: 303261

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			11/13/13 14:43	1

Lab Sample ID: LCS 680-303261/5
Matrix: Water
Analysis Batch: 303261

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	17.3		mg/L		86	80 - 120

Lab Sample ID: 680-95803-6 DU
Matrix: Water
Analysis Batch: 303261

Client Sample ID: BSA-MW-5D-F(0.2)-1113
Prep Type: Dissolved

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Dissolved Organic Carbon	7.3		7.31		mg/L		0.3	30

Method: 415.1 - TOC

Lab Sample ID: MB 680-302557/2
Matrix: Water
Analysis Batch: 302557

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			11/09/13 14:55	1

Lab Sample ID: LCS 680-302557/3
Matrix: Water
Analysis Batch: 302557

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	19.3		mg/L		96	80 - 120

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Analysis Batch: 302958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95803-1	BSA-MW-4D-1113	Total/NA	Water	8260B	
680-95803-3	CPA-MW-4D-1113	Total/NA	Water	8260B	
680-95803-5	BSA-MW-5D-1113	Total/NA	Water	8260B	
680-95803-7	CPA-MW-5D-1113	Total/NA	Water	8260B	
680-95803-9	4Q13 LTM Trip Blank #1	Total/NA	Water	8260B	
LCS 680-302958/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-302958/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-302958/8	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 303240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95803-5 MS	BSA-MW-5D-1113-MS	Total/NA	Water	8260B	
680-95803-5 MSD	BSA-MW-5D-1113-MSD	Total/NA	Water	8260B	
LCS 680-303240/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-303240/12	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-303240/8	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 302324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95803-1	BSA-MW-4D-1113	Total/NA	Water	RSK-175	
680-95803-3	CPA-MW-4D-1113	Total/NA	Water	RSK-175	
680-95803-5	BSA-MW-5D-1113	Total/NA	Water	RSK-175	
680-95803-7	CPA-MW-5D-1113	Total/NA	Water	RSK-175	
LCS 680-302324/10	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-302324/8	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-302324/11	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-302324/9	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-302324/3	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 302028

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95803-1	BSA-MW-4D-1113	Total Recoverable	Water	3005A	
680-95803-2	BSA-MW-4D-F(0.2)-1113	Dissolved	Water	3005A	
680-95803-3	CPA-MW-4D-1113	Total Recoverable	Water	3005A	
680-95803-4	CPA-MW-4D-F(0.2)-1113	Dissolved	Water	3005A	
680-95803-5	BSA-MW-5D-1113	Total Recoverable	Water	3005A	
680-95803-6	BSA-MW-5D-F(0.2)-1113	Dissolved	Water	3005A	
680-95803-7	CPA-MW-5D-1113	Total Recoverable	Water	3005A	
680-95803-8	CPA-MW-5D-F(0.2)-1113	Dissolved	Water	3005A	
680-95803-8 MS	CPA-MW-5D-F(0.2)-1113	Dissolved	Water	3005A	
680-95803-8 MSD	CPA-MW-5D-F(0.2)-1113	Dissolved	Water	3005A	
LCS 680-302028/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-302028/1-A	Method Blank	Total Recoverable	Water	3005A	

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Metals (Continued)

Analysis Batch: 302301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95803-1	BSA-MW-4D-1113	Total Recoverable	Water	6010C	302028
680-95803-2	BSA-MW-4D-F(0.2)-1113	Dissolved	Water	6010C	302028
680-95803-3	CPA-MW-4D-1113	Total Recoverable	Water	6010C	302028
680-95803-4	CPA-MW-4D-F(0.2)-1113	Dissolved	Water	6010C	302028
680-95803-5	BSA-MW-5D-1113	Total Recoverable	Water	6010C	302028
680-95803-6	BSA-MW-5D-F(0.2)-1113	Dissolved	Water	6010C	302028
680-95803-7	CPA-MW-5D-1113	Total Recoverable	Water	6010C	302028
680-95803-8	CPA-MW-5D-F(0.2)-1113	Dissolved	Water	6010C	302028
680-95803-8 MS	CPA-MW-5D-F(0.2)-1113	Dissolved	Water	6010C	302028
680-95803-8 MSD	CPA-MW-5D-F(0.2)-1113	Dissolved	Water	6010C	302028
LCS 680-302028/2-A	Lab Control Sample	Total Recoverable	Water	6010C	302028
MB 680-302028/1-A	Method Blank	Total Recoverable	Water	6010C	302028

General Chemistry

Analysis Batch: 301807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95803-1	BSA-MW-4D-1113	Total/NA	Water	353.2	
680-95803-3	CPA-MW-4D-1113	Total/NA	Water	353.2	
680-95803-5	BSA-MW-5D-1113	Total/NA	Water	353.2	
680-95803-5 DU	BSA-MW-5D-1113	Total/NA	Water	353.2	
680-95803-7	CPA-MW-5D-1113	Total/NA	Water	353.2	
LCS 680-301807/14	Lab Control Sample	Total/NA	Water	353.2	
MB 680-301807/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 301979

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95803-1	BSA-MW-4D-1113	Total/NA	Water	375.4	
680-95803-3	CPA-MW-4D-1113	Total/NA	Water	375.4	
680-95803-5	BSA-MW-5D-1113	Total/NA	Water	375.4	
680-95803-7	CPA-MW-5D-1113	Total/NA	Water	375.4	
LCS 680-301979/7	Lab Control Sample	Total/NA	Water	375.4	
MB 680-301979/39	Method Blank	Total/NA	Water	375.4	

Analysis Batch: 302557

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95803-1	BSA-MW-4D-1113	Total/NA	Water	415.1	
680-95803-3	CPA-MW-4D-1113	Total/NA	Water	415.1	
680-95803-5	BSA-MW-5D-1113	Total/NA	Water	415.1	
680-95803-7	CPA-MW-5D-1113	Total/NA	Water	415.1	
LCS 680-302557/3	Lab Control Sample	Total/NA	Water	415.1	
MB 680-302557/2	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 302724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95803-1	BSA-MW-4D-1113	Total/NA	Water	325.2	
680-95803-1 DU	BSA-MW-4D-1113	Total/NA	Water	325.2	
680-95803-3	CPA-MW-4D-1113	Total/NA	Water	325.2	
LCS 680-302724/1	Lab Control Sample	Total/NA	Water	325.2	
MB 680-302724/35	Method Blank	Total/NA	Water	325.2	

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QC Association Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

General Chemistry (Continued)

Analysis Batch: 303062

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95803-1	BSA-MW-4D-1113	Total/NA	Water	310.1	
680-95803-1 DU	BSA-MW-4D-1113	Total/NA	Water	310.1	
680-95803-3	CPA-MW-4D-1113	Total/NA	Water	310.1	
680-95803-5	BSA-MW-5D-1113	Total/NA	Water	310.1	
LCS 680-303062/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-303062/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-303062/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 303119

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95803-5	BSA-MW-5D-1113	Total/NA	Water	325.2	
680-95803-5 DU	BSA-MW-5D-1113	Total/NA	Water	325.2	
680-95803-7	CPA-MW-5D-1113	Total/NA	Water	325.2	
LCS 680-303119/7	Lab Control Sample	Total/NA	Water	325.2	
MB 680-303119/45	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 303261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95803-2	BSA-MW-4D-F(0.2)-1113	Dissolved	Water	415.1	
680-95803-4	CPA-MW-4D-F(0.2)-1113	Dissolved	Water	415.1	
680-95803-6	BSA-MW-5D-F(0.2)-1113	Dissolved	Water	415.1	
680-95803-6 DU	BSA-MW-5D-F(0.2)-1113	Dissolved	Water	415.1	
680-95803-8	CPA-MW-5D-F(0.2)-1113	Dissolved	Water	415.1	
LCS 680-303261/5	Lab Control Sample	Dissolved	Water	415.1	
MB 680-303261/6	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 303380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95803-7	CPA-MW-5D-1113	Total/NA	Water	310.1	
LCS 680-303380/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-303380/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-303380/5	Method Blank	Total/NA	Water	310.1	

Client Sample ID: BSA-MW-4D-1113 — **Lab Sample ID: 680-95803-1**
Date Collected: 11/04/13 13:45 — **Matrix: Water**
Date Received: 11/05/13 09:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		25	302958	11/13/13 15:37	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302324	11/08/13 15:31	AJMC	TAL SAV
Total Recoverable	Prep	3005A			302028	11/06/13 17:15	DAS	TAL SAV
Total Recoverable	Analysis	6010C		1	302301	11/07/13 19:38	BCB	TAL SAV
Total/NA	Analysis	353.2		1	301807	11/05/13 16:46	CRW	TAL SAV
Total/NA	Analysis	375.4		10	301979	11/06/13 11:54	JME	TAL SAV
Total/NA	Analysis	415.1		1	302557	11/09/13 19:59	CMP	TAL SAV
Total/NA	Analysis	325.2		1	302724	11/11/13 13:00	JME	TAL SAV
Total/NA	Analysis	310.1		1	303062	11/13/13 12:24	TAR	TAL SAV

Client Sample ID: BSA-MW-4D-F(0.2)-1113 — **Lab Sample ID: 680-95803-2**
Date Collected: 11/04/13 13:45 — **Matrix: Water**
Date Received: 11/05/13 09:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302028	11/06/13 17:15	DAS	TAL SAV
Dissolved	Analysis	6010C		1	302301	11/07/13 19:42	BCB	TAL SAV
Dissolved	Analysis	415.1		1	303261	11/13/13 16:01	CMP	TAL SAV

Client Sample ID: CPA-MW-4D-1113 — **Lab Sample ID: 680-95803-3**
Date Collected: 11/04/13 11:50 — **Matrix: Water**
Date Received: 11/05/13 09:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	302958	11/13/13 16:07	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302324	11/08/13 15:18	AJMC	TAL SAV
Total Recoverable	Prep	3005A			302028	11/06/13 17:15	DAS	TAL SAV
Total Recoverable	Analysis	6010C		1	302301	11/07/13 19:47	BCB	TAL SAV
Total/NA	Analysis	353.2		1	301807	11/05/13 16:31	CRW	TAL SAV
Total/NA	Analysis	375.4		1	301979	11/06/13 11:33	JME	TAL SAV
Total/NA	Analysis	415.1		1	302557	11/09/13 20:13	CMP	TAL SAV
Total/NA	Analysis	325.2		5	302724	11/11/13 13:26	JME	TAL SAV
Total/NA	Analysis	310.1		1	303062	11/13/13 12:10	TAR	TAL SAV

Client Sample ID: CPA-MW-4D-F(0.2)-1113 — **Lab Sample ID: 680-95803-4**
Date Collected: 11/04/13 11:50 — **Matrix: Water**
Date Received: 11/05/13 09:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302028	11/06/13 17:15	DAS	TAL SAV
Dissolved	Analysis	6010C		1	302301	11/07/13 19:52	BCB	TAL SAV

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Client Sample ID: CPA-MW-4D-F(0.2)-1113 — **Lab Sample ID: 680-95803-4**
Date Collected: 11/04/13 11:50 — Matrix: Water
Date Received: 11/05/13 09:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	303261	11/13/13 16:15	CMP	TAL SAV

Client Sample ID: BSA-MW-5D-1113 — **Lab Sample ID: 680-95803-5**
Date Collected: 11/04/13 15:30 — Matrix: Water
Date Received: 11/05/13 09:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		5	302958	11/13/13 16:36	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302324	11/08/13 15:05	AJMC	TAL SAV
Total Recoverable	Prep	3005A			302028	11/06/13 17:15	DAS	TAL SAV
Total Recoverable	Analysis	6010C		1	302301	11/07/13 19:56	BCB	TAL SAV
Total/NA	Analysis	353.2		1	301807	11/05/13 16:35	CRW	TAL SAV
Total/NA	Analysis	375.4		1	301979	11/06/13 11:33	JME	TAL SAV
Total/NA	Analysis	415.1		1	302557	11/09/13 20:27	CMP	TAL SAV
Total/NA	Analysis	310.1		1	303062	11/13/13 12:00	TAR	TAL SAV
Total/NA	Analysis	325.2		5	303119	11/13/13 14:49	JME	TAL SAV

Client Sample ID: BSA-MW-5D-F(0.2)-1113 — **Lab Sample ID: 680-95803-6**
Date Collected: 11/04/13 15:30 — Matrix: Water
Date Received: 11/05/13 09:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302028	11/06/13 17:15	DAS	TAL SAV
Dissolved	Analysis	6010C		1	302301	11/07/13 20:01	BCB	TAL SAV
Dissolved	Analysis	415.1		1	303261	11/13/13 17:01	CMP	TAL SAV

Client Sample ID: CPA-MW-5D-1113 — **Lab Sample ID: 680-95803-7**
Date Collected: 11/04/13 10:10 — Matrix: Water
Date Received: 11/05/13 09:52

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		20	302958	11/13/13 17:06	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302324	11/08/13 14:52	AJMC	TAL SAV
Total Recoverable	Prep	3005A			302028	11/06/13 17:15	DAS	TAL SAV
Total Recoverable	Analysis	6010C		1	302301	11/07/13 20:05	BCB	TAL SAV
Total/NA	Analysis	353.2		1	301807	11/05/13 16:34	CRW	TAL SAV
Total/NA	Analysis	375.4		10	301979	11/06/13 11:54	JME	TAL SAV
Total/NA	Analysis	415.1		1	302557	11/09/13 20:42	CMP	TAL SAV
Total/NA	Analysis	325.2		5	303119	11/13/13 14:49	JME	TAL SAV
Total/NA	Analysis	310.1		1	303380	11/14/13 16:50	LBH	TAL SAV

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Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Client Sample ID: CPA-MW-5D-F(0.2)-1113
Date Collected: 11/04/13 10:10
Date Received: 11/05/13 09:52

Lab Sample ID: 680-95803-8
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302028	11/06/13 17:15	DAS	TAL SAV
Dissolved	Analysis	6010C		1	302301	11/07/13 20:10	BCB	TAL SAV
Dissolved	Analysis	415.1		1	303261	11/13/13 17:28	CMP	TAL SAV

Client Sample ID: 4Q13 LTM Trip Blank #1
Date Collected: 11/04/13 00:00
Date Received: 11/05/13 09:52

Lab Sample ID: 680-95803-9
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	302958	11/13/13 13:02	JD1	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

DEC 04 2013

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/4/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) C			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Soluble Samples	VOCs by 8260B	Total Fe/Mn by 6010C	Alk./CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
BSA-MW-4D-1113 ✓	11/4/13	1345	G	Water	12		3	1	1	1	3	2	1			
BSA-MW-4D-F(0.2)-1113 ✓		1345	G	Water	2	X								1	1	
CPA-MW-4D-1113 ✓		1150	G	Water	12		3	1	1	1	3	2	1			
CPA-MW-4D-F(0.2)-1113 ✓		1150	G	Water	2	X								1	1	
BSA-MW-5D-1113 ✓		1530	G	Water	12		3	1	1	1	3	2	1			
BSA-MW-5D-F(0.2)-1113 ✓		1530	G	Water	2	X								1	1	
CPA-MW-5D-1113 ✓		1010	G	Water	12		3	1	1	1	3	2	1			
CPA-MW-5D-F(0.2)-1113 ✓		1010	G	Water	2	X								1	1	
BSA-MW-5D-1113-MS		1530	G	Water	3		3									
BSA-MW-5D-1113-MSD	↓		G	Water	3		3									
4Q13 LTM Trip Blank # 1 ✓	11/4/13	—	—	Water	2		2									
							2	4	1	1	1	3,1	2	4	2	

680-95803 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ son B ☐ nown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ rchive For _____ Months

Special Instructions/QC Requirements & Comments:

680-95803

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	11/4/13 1630			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TA SV	Date/Time: 11/05/13 0952

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Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-95803-1
SDG Number: KPS097

Login Number: 95803
List Number: 1
Creator: Conner, Keaton

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Certification Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95803-1
SDG: KPS097

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	02-01-14
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-13 *
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13 *
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	06-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13 *
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky	State Program	4	90084	12-31-13 *
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13 *
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-14 *
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13 *
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-13 *
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia	State Program	3	9950C	12-31-13 *
West Virginia DEP	State Program	3	94	06-30-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

* Expired certification is currently pending renewal and is considered valid.

DEC 04 2013

Solutia Krummrich Data Review
WGK LTM 4Q13

Laboratory SDG: KPS098

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 12/5/2013

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund Inorganic Data Review 2010

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009)

Sample Identification	
BSA-MW-1S-1113	BSA-MW-1S-F(0.2)-1113
CPA-MW-1D-1113	CPA-MW-1D-F(0.2)-1113
CPA-MW-2D-1113	CPA-MW-2D-1113-AD
CPA-MW-2D-F(0.2)-1113	CPA-MW-1D-1113-EB
BSA-MW-3D-1113	BSA-MW-3D-F(0.2)-1113
4Q13 LTM Trip Blank #2	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated sulfate MS/MSD recoveries were outside evaluation criteria for sample BSA-MW-1S-1113. Samples were diluted due to high levels of target analytes. Although not indicated in the laboratory case narrative, VOCs were detected in the equipment blank. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that a pH > 2 for dissolved organic carbon in samples BSA-MW-1S-F(0.2)-1113 and CPA-MW-1D-F(0.2)-1113; please see section 11.0 of this review for qualifications. Additionally, the laboratory indicated that the container identification information for sample BSA-MW-1S-1113 did not match the COC. URS contacted the laboratory; data were reported using the correct COC-designated sample IDs.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration/Amount
CPA-MW-1D-1113-EB	VOCs	Benzene	20 ug/L
CPA-MW-1D-1113-EB	VOCs	Chlorobenzene	9.8 ug/L
CPA-MW-1D-1113-EB	VOCs	1,4-Dichlorobenzene	10 ug/L

Qualifications due to blank contamination are included in the table below. Due to the uncertainty of potential carryover, detections for benzene were qualified as estimated. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not required qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
BSA-MW-3D-1113	VOCs	Benzene	-	**J**

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, although not requested, sample BSA-MW-1S-1113 was spiked and analyzed for sulfate.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
BSA-MW-1S-1113	General chemistry	Sulfate	**44/52**	17	75-125/30

Analytical data that required qualification based on MS/MSD data are included in the table below.

Sample ID	Parameter	Analyte	Qualification
BSA-MW-1S-1113	General chemistry	Sulfate	**UJ**

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

Yes, sample BSA-MW-3D-1113 was spiked and analyzed for alkalinity and free carbon dioxide, sample CPA-MW-2D-1113 was spiked and analyzed for sulfate, and sample BSA-MW-1S-1113 was spiked and analyzed for total organic carbon.

Were laboratory duplicate sample RPDs within criteria?

Yes

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
CPA-MW-2D-1113	CPA-MW-2D-1113-AD

Were field duplicates within evaluation criteria?

Yes

10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

11.0 Additional Qualifications

Were additional qualifications applied?

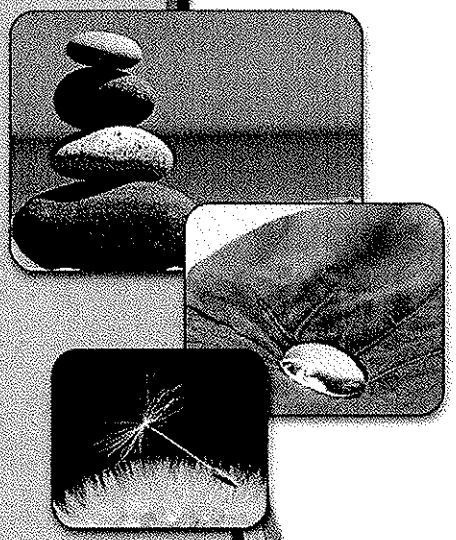
Yes, the following samples are qualified, as summarized below, due to pH > 2.

Sample ID	Parameter	Analyte	Qualification
BSA-MW-1S-F(0.2)-1113	General chemistry	Dissolved organic carbon	**J**
CPA-MW-1D-F(0.2)-1113	General chemistry	Dissolved organic carbon	**J**

SDG KPS098

Results of Samples from Monitoring Well:

BSA-MW-1S
BSA-MW-3D
CPA-MW-1D
CPA-MW-2D



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-95841-1
TestAmerica Sample Delivery Group: KPS098
Client Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
11/26/2013 2:21:23 PM

Michele Kersey, Project Manager I
(912)354-7858
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Reviewed on DEC 05 2013

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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DEC 05 2013

Job ID: 680-95841-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 4Q13 NOV 2013

Report Number: 680-95841-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 11/6/2013 9:37 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6° C.

Except:

Method(s) 8260B: The container label for the following sample(s) did not match the information listed on the Chain-of-Custody (COC): BSA-MW-1S-1113 (680-95841-1). The container labels list BSA-MW-2D-113. The COC lists BSA-MW-1S-113.The date and the times do match.

Method(s) 415.1, SM 5310B: The following sample(s) were collected in properly preserved vials, however, the pH was outside the required criteria when verified by the laboratory: BSA-MW-1S-F(0.2)-1113 (680-95841-2), CPA-MW-1D-F(0.2)-1113 (680-95841-4).

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples BSA-MW-1S-1113 (680-95841-1), CPA-MW-1D-1113 (680-95841-3), CPA-MW-2D-1113 (680-95841-5), CPA-MW-2D-1113-AD (680-95841-6), CPA-MW-1D-1113-EB (680-95841-8), BSA-MW-3D-1113 (680-95841-9) and 4Q13 LTM Trip Blank #2 (680-95841-11) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/13/2013.

Samples BSA-MW-1S-1113 (680-95841-1)[10000X], CPA-MW-1D-1113 (680-95841-3)[250X], CPA-MW-2D-1113 (680-95841-5)[250X], CPA-MW-2D-1113-AD (680-95841-6)[250X] and BSA-MW-3D-1113 (680-95841-9)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED GASES
Samples BSA-MW-1S-1113 (680-95841-1), CPA-MW-1D-1113 (680-95841-3), CPA-MW-2D-1113 (680-95841-5) and BSA-MW-3D-1113 (680-95841-9) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 11/08/2013.

No difficulties were encountered during the dissolved gases analysis.

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TestAmerica Savannah

Job ID: 680-95841-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

All quality control parameters were within the acceptance limits.

METALS (ICP)
Samples BSA-MW-1S-F(0.2)-1113 (680-95841-2), CPA-MW-1D-F(0.2)-1113 (680-95841-4), CPA-MW-2D-F(0.2)-1113 (680-95841-7) and BSA-MW-3D-F(0.2)-1113 (680-95841-10) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/08/2013 and analyzed on 11/11/2013.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

METALS (ICP)
Samples BSA-MW-1S-1113 (680-95841-1), CPA-MW-1D-1113 (680-95841-3), CPA-MW-2D-1113 (680-95841-5) and BSA-MW-3D-1113 (680-95841-9) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/08/2013 and analyzed on 11/11/2013.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

ALKALINITY
Samples BSA-MW-1S-1113 (680-95841-1), CPA-MW-1D-1113 (680-95841-3), CPA-MW-2D-1113 (680-95841-5) and BSA-MW-3D-1113 (680-95841-9) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 11/14/2013.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

CHLORIDE
Samples BSA-MW-1S-1113 (680-95841-1), CPA-MW-1D-1113 (680-95841-3), CPA-MW-2D-1113 (680-95841-5) and BSA-MW-3D-1113 (680-95841-9) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 11/13/2013.

Samples CPA-MW-1D-1113 (680-95841-3)[2X] and BSA-MW-3D-1113 (680-95841-9)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

NITRATE-NITRITE AS NITROGEN
Samples BSA-MW-1S-1113 (680-95841-1), CPA-MW-1D-1113 (680-95841-3), CPA-MW-2D-1113 (680-95841-5) and BSA-MW-3D-1113 (680-95841-9) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 11/06/2013.

No difficulties were encountered during the nitrate-nitrite analysis.

All quality control parameters were within the acceptance limits.

SULFATE
Samples BSA-MW-1S-1113 (680-95841-1), CPA-MW-1D-1113 (680-95841-3), CPA-MW-2D-1113 (680-95841-5) and BSA-MW-3D-1113 (680-95841-9) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 11/08/2013.

The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 302385 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

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TestAmerica Savannah

Job ID: 680-95841-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Refer to the QC report for details.

Samples CPA-MW-2D-1113 (680-95841-5)[5X] and BSA-MW-3D-1113 (680-95841-9)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the sulfate analysis.

All other quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON

Samples BSA-MW-1S-1113 (680-95841-1), CPA-MW-1D-1113 (680-95841-3), CPA-MW-2D-1113 (680-95841-5) and BSA-MW-3D-1113 (680-95841-9) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 11/14/2013.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED ORGANIC CARBON (DOC)

Samples BSA-MW-1S-F(0.2)-1113 (680-95841-2), CPA-MW-1D-F(0.2)-1113 (680-95841-4), CPA-MW-2D-F(0.2)-1113 (680-95841-7) and BSA-MW-3D-F(0.2)-1113 (680-95841-10) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 11/13/2013.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

DEC 05 2013

Sample Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-95841-1	BSA-MW-1S-1113	Water	11/05/13 10:20	11/06/13 09:37
680-95841-2	BSA-MW-1S-F(0.2)-1113	Water	11/05/13 10:20	11/06/13 09:37
680-95841-3	CPA-MW-1D-1113	Water	11/05/13 13:45	11/06/13 09:37
680-95841-4	CPA-MW-1D-F(0.2)-1113	Water	11/05/13 13:45	11/06/13 09:37
680-95841-5	CPA-MW-2D-1113	Water	11/05/13 12:05	11/06/13 09:37
680-95841-6	CPA-MW-2D-1113-AD	Water	11/05/13 12:05	11/06/13 09:37
680-95841-7	CPA-MW-2D-F(0.2)-1113	Water	11/05/13 12:05	11/06/13 09:37
680-95841-8	CPA-MW-1D-1113-EB	Water	11/05/13 12:50	11/06/13 09:37
680-95841-9	BSA-MW-3D-1113	Water	11/05/13 15:20	11/06/13 09:37
680-95841-10	BSA-MW-3D-F(0.2)-1113	Water	11/05/13 15:20	11/06/13 09:37
680-95841-11	4Q13 LTM Trip Blank #2	Water	11/05/13 00:00	11/06/13 09:37

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TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

DEC 05 2013

TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F	MS/MSD Recovery and/or RPD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

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TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Client Sample ID: BSA-MW-1S-1113 — Lab Sample ID: 680-95841-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	920000		10000		ug/L	10000		8260B	Total/NA
Methane (TCD)	7000		0.58		ug/L	1		RSK-175	Total/NA
Iron	8.3		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.87		0.010		mg/L	1		6010C	Total Recoverable
Chloride	100		1.0		mg/L	1		325.2	Total/NA
Total Organic Carbon	7.2		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	760		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	41		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-1S-F(0.2)-1113 — Lab Sample ID: 680-95841-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	8.2		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.87		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	6.7	J	1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-1D-1113 — Lab Sample ID: 680-95841-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	9300		250		ug/L	250		8260B	Total/NA
Chlorobenzene	23000		250		ug/L	250		8260B	Total/NA
1,2-Dichlorobenzene	21000		250		ug/L	250		8260B	Total/NA
1,3-Dichlorobenzene	1900		250		ug/L	250		8260B	Total/NA
1,4-Dichlorobenzene	15000		250		ug/L	250		8260B	Total/NA
Iron	0.20		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.036		0.010		mg/L	1		6010C	Total Recoverable
Chloride	100		2.0		mg/L	2		325.2	Total/NA
Total Organic Carbon	11		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	720		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-1D-F(0.2)-1113 — Lab Sample ID: 680-95841-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	0.070		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.026		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	10	J	1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-2D-1113 — Lab Sample ID: 680-95841-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	610		250		ug/L	250		8260B	Total/NA
Chlorobenzene	36000		250		ug/L	250		8260B	Total/NA
1,2-Dichlorobenzene	640		250		ug/L	250		8260B	Total/NA
1,3-Dichlorobenzene	500		250		ug/L	250		8260B	Total/NA
1,4-Dichlorobenzene	11000		250		ug/L	250		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

DEC 05 2013

Detection Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Client Sample ID: CPA-MW-2D-1113 (Continued)

Lab Sample ID: 680-95841-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethane	2.0		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	850		0.58		ug/L	1		RSK-175	Total/NA
Iron	6.4		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.36		0.010		mg/L	1		6010C	Total Recoverable
Chloride	48		1.0		mg/L	1		325.2	Total/NA
Sulfate	59		25		mg/L	5		375.4	Total/NA
Total Organic Carbon	8.8		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	470		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	30		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-2D-1113-AD

Lab Sample ID: 680-95841-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	640		250		ug/L	250		8260B	Total/NA
Chlorobenzene	35000		250		ug/L	250		8260B	Total/NA
1,2-Dichlorobenzene	730		250		ug/L	250		8260B	Total/NA
1,3-Dichlorobenzene	500		250		ug/L	250		8260B	Total/NA
1,4-Dichlorobenzene	11000		250		ug/L	250		8260B	Total/NA

Client Sample ID: CPA-MW-2D-F(0.2)-1113

Lab Sample ID: 680-95841-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	7.0		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.40		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	7.9		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-1D-1113-EB

Lab Sample ID: 680-95841-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	20		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene	9.8		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	10		1.0		ug/L	1		8260B	Total/NA

Client Sample ID: BSA-MW-3D-1113

Lab Sample ID: 680-95841-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	90	J	50		ug/L	50		8260B	Total/NA
Chlorobenzene	2400		50		ug/L	50		8260B	Total/NA
1,4-Dichlorobenzene	350		50		ug/L	50		8260B	Total/NA
Ethane	3.3		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	1900		0.58		ug/L	1		RSK-175	Total/NA
Iron	10		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.52		0.010		mg/L	1		6010C	Total Recoverable
Chloride	120		2.0		mg/L	2		325.2	Total/NA
Sulfate	64		25		mg/L	5		375.4	Total/NA
Total Organic Carbon	3.4		1.0		mg/L	1		415.1	Total/NA

This Detection Summary does not include radiochemical test results.

DEC 05 2013

Client Sample ID: BSA-MW-3D-1113 (Continued)

Lab Sample ID: 680-95841-9

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	440		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	29		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-3D-F(0.2)-1113

Lab Sample ID: 680-95841-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	10		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.53		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.6		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: 4Q13 LTM Trip Blank #2

Lab Sample ID: 680-95841-11

No Detections.

This Detection Summary does not include radiochemical test results.

DEC 05 2013

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Client Sample ID: BSA-MW-1S-1113
Date Collected: 11/05/13 10:20
Date Received: 11/06/13 09:37

Lab Sample ID: 680-95841-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**920000**		10000		ug/L			11/13/13 17:35	10000
Chlorobenzene	10000	U	10000		ug/L			11/13/13 17:35	10000
1,2-Dichlorobenzene	10000	U	10000		ug/L			11/13/13 17:35	10000
1,3-Dichlorobenzene	10000	U	10000		ug/L			11/13/13 17:35	10000
1,4-Dichlorobenzene	10000	U	10000		ug/L			11/13/13 17:35	10000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*107*		*70 - 130*		*11/13/13 17:35*	*10000*
Dibromofluoromethane	*97*		*70 - 130*		*11/13/13 17:35*	*10000*
Toluene-d8 (Surr)	*91*		*70 - 130*		*11/13/13 17:35*	*10000*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/08/13 13:35	1
Ethylene	1.0	U	1.0		ug/L			11/08/13 13:35	1
Methane (TCD)	**7000**		0.58		ug/L			11/08/13 13:35	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**8.3**		0.050		mg/L		11/08/13 11:32	11/11/13 23:01	1
Manganese	**0.87**		0.010		mg/L		11/08/13 11:32	11/11/13 23:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**100**		1.0		mg/L			11/13/13 13:25	1
Nitrate as N	0.050	U	0.050		mg/L			11/06/13 14:38	1
Sulfate	5.0	U UJ	5.0		mg/L			11/08/13 12:34	1
Total Organic Carbon	**7.2**		1.0		mg/L			11/14/13 15:14	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**760**		5.0		mg/L			11/14/13 17:01	1
Carbon Dioxide, Free	**41**		5.0		mg/L			11/14/13 17:01	1

DEC 05 2013

TestAmerica Savannah

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Client Sample ID: BSA-MW-1S-F(0.2)-1113
Date Collected: 11/05/13 10:20
Date Received: 11/06/13 09:37

Lab Sample ID: 680-95841-2
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	8.2		0.050		mg/L		11/08/13 11:32	11/11/13 23:24	1
Manganese, Dissolved	0.87		0.010		mg/L		11/08/13 11:32	11/11/13 23:24	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	6.7	J	1.0		mg/L			11/13/13 17:42	1

DEC 05 2013

Client Sample ID: CPA-MW-1D-1113
Date Collected: 11/05/13 13:45
Date Received: 11/06/13 09:37

Lab Sample ID: 680-95841-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	9300		250		ug/L			11/13/13 18:07	250
Chlorobenzene	23000		250		ug/L			11/13/13 18:07	250
1,2-Dichlorobenzene	21000		250		ug/L			11/13/13 18:07	250
1,3-Dichlorobenzene	1900		250		ug/L			11/13/13 18:07	250
1,4-Dichlorobenzene	15000		250		ug/L			11/13/13 18:07	250

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*110*		*70 - 130*		*11/13/13 18:07*	*250*
Dibromofluoromethane	*96*		*70 - 130*		*11/13/13 18:07*	*250*
Toluene-d8 (Surr)	*99*		*70 - 130*		*11/13/13 18:07*	*250*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/08/13 17:39	1
Ethylene	1.0	U	1.0		ug/L			11/08/13 17:39	1
Methane	0.58	U	0.58		ug/L			11/08/13 17:39	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.20		0.050		mg/L		11/08/13 11:32	11/11/13 23:29	1
Manganese	0.036		0.010		mg/L		11/08/13 11:32	11/11/13 23:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	100		2.0		mg/L			11/13/13 15:02	2
Nitrate as N	0.050	U	0.050		mg/L			11/06/13 14:52	1
Sulfate	5.0	U	5.0		mg/L			11/08/13 11:28	1
Total Organic Carbon	11		1.0		mg/L			11/14/13 15:39	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	720		5.0		mg/L			11/14/13 17:11	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			11/14/13 17:11	1

DEC 05 2013

Client Sample ID: CPA-MW-1D-F(0.2)-1113
Date Collected: 11/05/13 13:45
Date Received: 11/06/13 09:37

Lab Sample ID: 680-95841-4
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.070		0.050		mg/L		11/08/13 11:32	11/11/13 23:33	1
Manganese, Dissolved	0.026		0.010		mg/L		11/08/13 11:32	11/11/13 23:33	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	10	J	1.0		mg/L			11/13/13 17:56	1

DEC 05 2013

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Client Sample ID: CPA-MW-2D-1113
Date Collected: 11/05/13 12:05
Date Received: 11/06/13 09:37

Lab Sample ID: 680-95841-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**610**		250		ug/L			11/13/13 18:37	250
Chlorobenzene	**36000**		250		ug/L			11/13/13 18:37	250
1,2-Dichlorobenzene	**640**		250		ug/L			11/13/13 18:37	250
1,3-Dichlorobenzene	**600**		250		ug/L			11/13/13 18:37	250
1,4-Dichlorobenzene	**11000**		250		ug/L			11/13/13 18:37	250

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*70 - 130*		*11/13/13 18:37*	*250*
Dibromofluoromethane	*101*		*70 - 130*		*11/13/13 18:37*	*250*
Toluene-d8 (Surr)	*95*		*70 - 130*		*11/13/13 18:37*	*250*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**2.0**		1.1		ug/L			11/08/13 17:26	1
Ethylene	1.0	U	1.0		ug/L			11/08/13 17:26	1
Methane (TCD)	**850**		0.58		ug/L			11/08/13 17:26	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**6.4**		0.050		mg/L		11/08/13 11:32	11/11/13 23:38	1
Manganese	**0.36**		0.010		mg/L		11/08/13 11:32	11/11/13 23:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**48**		1.0		mg/L			11/13/13 13:35	1
Nitrate as N	0.050	U	0.050		mg/L			11/06/13 14:40	1
Sulfate	**59**		25		mg/L			11/08/13 12:38	5
Total Organic Carbon	**8.8**		1.0		mg/L			11/14/13 15:53	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**470**		5.0		mg/L			11/14/13 17:20	1
Carbon Dioxide, Free	**30**		5.0		mg/L			11/14/13 17:20	1

DEC 05 2013

TestAmerica Savannah

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Client Sample ID: CPA-MW-2D-1113-AD
Date Collected: 11/05/13 12:05
Date Received: 11/06/13 09:37

Lab Sample ID: 680-95841-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	640		250		ug/L			11/13/13 19:09	250
Chlorobenzene	35000		250		ug/L			11/13/13 19:09	250
1,2-Dichlorobenzene	730		250		ug/L			11/13/13 19:09	250
1,3-Dichlorobenzene	500		250		ug/L			11/13/13 19:09	250
1,4-Dichlorobenzene	11000		250		ug/L			11/13/13 19:09	250

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*107*		*70 - 130*		*11/13/13 19:09*	*250*
Dibromofluoromethane	*96*		*70 - 130*		*11/13/13 19:09*	*250*
Toluene-d8 (Surr)	*101*		*70 - 130*		*11/13/13 19:09*	*250*

DEC 0 5 2013

TestAmerica Savannah

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Client Sample ID: CPA-MW-2D-F(0.2)-1113
Date Collected: 11/05/13 12:05
Date Received: 11/06/13 09:37

Lab Sample ID: 680-95841-7
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	7.0		0.050		mg/L		11/08/13 11:32	11/11/13 23:43	1
Manganese, Dissolved	0.40		0.010		mg/L		11/08/13 11:32	11/11/13 23:43	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	7.9		1.0		mg/L			11/13/13 18:11	1

DEC 05 2013

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Client Sample ID: CPA-MW-1D-1113-EB
Date Collected: 11/05/13 12:50
Date Received: 11/06/13 09:37

Lab Sample ID: 680-95841-8
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	20		1.0		ug/L			11/13/13 13:34	1
Chlorobenzene	9.8		1.0		ug/L			11/13/13 13:34	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 13:34	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 13:34	1
1,4-Dichlorobenzene	10		1.0		ug/L			11/13/13 13:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*105*		*70 - 130*		*11/13/13 13:34*	*1*
Dibromofluoromethane	*107*		*70 - 130*		*11/13/13 13:34*	*1*
Toluene-d8 (Surr)	*91*		*70 - 130*		*11/13/13 13:34*	*1*

DEC 05 2013

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Client Sample ID: BSA-MW-3D-1113
Date Collected: 11/05/13 15:20
Date Received: 11/06/13 09:37

Lab Sample ID: 680-95841-9
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**90**	J	50		ug/L			11/13/13 19:38	50
Chlorobenzene	**2400**		50		ug/L			11/13/13 19:38	50
1,2-Dichlorobenzene	50	U	50		ug/L			11/13/13 19:38	50
1,3-Dichlorobenzene	50	U	50		ug/L			11/13/13 19:38	50
1,4-Dichlorobenzene	**350**		50		ug/L			11/13/13 19:38	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*107*		*70 - 130*		*11/13/13 19:38*	*50*
Dibromofluoromethane	*104*		*70 - 130*		*11/13/13 19:38*	*50*
Toluene-d8 (Surr)	*88*		*70 - 130*		*11/13/13 19:38*	*50*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**3.3**		1.1		ug/L			11/08/13 17:13	1
Ethylene	1.0	U	1.0		ug/L			11/08/13 17:13	1
Methane (TCD)	**1900**		0.58		ug/L			11/08/13 17:13	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**10**		0.050		mg/L		11/08/13 11:32	11/11/13 23:47	1
Manganese	**0.52**		0.010		mg/L		11/08/13 11:32	11/11/13 23:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**120**		2.0		mg/L			11/13/13 15:02	2
Nitrate as N	0.050	U	0.050		mg/L			11/06/13 14:47	1
Sulfate	**64**		25		mg/L			11/08/13 12:40	5
Total Organic Carbon	**3.4**		1.0		mg/L			11/14/13 16:09	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**440**		5.0		mg/L			11/14/13 17:28	1
Carbon Dioxide, Free	**29**		5.0		mg/L			11/14/13 17:28	1

DEC 05 2013

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Client Sample ID: BSA-MW-3D-F(0.2)-1113
Date Collected: 11/05/13 15:20
Date Received: 11/06/13 09:37

Lab Sample ID: 680-95841-10
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	10		0.050		mg/L		11/08/13 11:32	11/11/13 23:52	1
Manganese, Dissolved	0.53		0.010		mg/L		11/08/13 11:32	11/11/13 23:52	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.6		1.0		mg/L			11/13/13 18:27	1

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Client Sample ID: 4Q13 LTM Trip Blank #2
Date Collected: 11/05/13 00:00
Date Received: 11/06/13 09:37

Lab Sample ID: 680-95841-11
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/13/13 14:04	1
Chlorobenzene	1.0	U	1.0		ug/L			11/13/13 14:04	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 14:04	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 14:04	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 14:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*70 - 130*		*11/13/13 14:04*	*1*
Dibromofluoromethane	*103*		*70 - 130*		*11/13/13 14:04*	*1*
Toluene-d8 (Surr)	*92*		*70 - 130*		*11/13/13 14:04*	*1*

Surrogate Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
680-95841-1	BSA-MW-1S-1113	107	97	91
680-95841-3	CPA-MW-1D-1113	110	96	99
680-95841-5	CPA-MW-2D-1113	104	101	95
680-95841-6	CPA-MW-2D-1113-AD	107	96	101
680-95841-8	CPA-MW-1D-1113-EB	105	107	91
680-95841-9	BSA-MW-3D-1113	107	104	88
680-95841-11	4Q13 LTM Trip Blank #2	104	103	92
LCS 680-302958/4	Lab Control Sample	100	107	98
LCSD 680-302958/5	Lab Control Sample Dup	107	100	104
MB 680-302958/8	Method Blank	108	106	92

Surrogate Legend

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

DEC 0 F

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-302958/8
Matrix: Water
Analysis Batch: 302958

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/13/13 12:33	1
Chlorobenzene	1.0	U	1.0		ug/L			11/13/13 12:33	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 12:33	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 12:33	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 12:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*108*		*70 - 130*		*11/13/13 12:33*	*1*
Dibromofluoromethane	*106*		*70 - 130*		*11/13/13 12:33*	*1*
Toluene-d8 (Surr)	*92*		*70 - 130*		*11/13/13 12:33*	*1*

Lab Sample ID: LCS 680-302958/4
Matrix: Water
Analysis Batch: 302958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.4		ug/L		97	74 - 123
Chlorobenzene	50.0	55.7		ug/L		111	79 - 120
1,2-Dichlorobenzene	50.0	46.9		ug/L		94	77 - 124
1,3-Dichlorobenzene	50.0	49.5		ug/L		99	79 - 123
1,4-Dichlorobenzene	50.0	48.7		ug/L		97	76 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*100*		*70 - 130*
Dibromofluoromethane	*107*		*70 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 680-302958/5
Matrix: Water
Analysis Batch: 302958

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	49.4		ug/L		99	74 - 123	2	30
Chlorobenzene	50.0	56.1		ug/L		112	79 - 120	1	30
1,2-Dichlorobenzene	50.0	54.0		ug/L		108	77 - 124	14	30
1,3-Dichlorobenzene	50.0	55.7		ug/L		111	79 - 123	12	30
1,4-Dichlorobenzene	50.0	53.9		ug/L		108	76 - 124	10	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*107*		*70 - 130*
Dibromofluoromethane	*100*		*70 - 130*
Toluene-d8 (Surr)	*104*		*70 - 130*

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-302324/3
Matrix: Water
Analysis Batch: 302324

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/08/13 11:43	1
Ethylene	1.0	U	1.0		ug/L			11/08/13 11:43	1
Methane	0.58	U	0.58		ug/L			11/08/13 11:43	1
Methane (TCD)	0.58	U	0.58		ug/L			11/08/13 11:43	1

Lab Sample ID: LCS 680-302324/10
Matrix: Water
Analysis Batch: 302324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1920		ug/L		100	75 - 125

Lab Sample ID: LCS 680-302324/8
Matrix: Water
Analysis Batch: 302324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	263		ug/L		91	75 - 125
Ethylene	269	227		ug/L		84	75 - 125
Methane	154	136		ug/L		88	75 - 125

Lab Sample ID: LCSD 680-302324/11
Matrix: Water
Analysis Batch: 302324

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1900		ug/L		99	75 - 125	1	30

Lab Sample ID: LCSD 680-302324/9
Matrix: Water
Analysis Batch: 302324

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	307		ug/L		106	75 - 125	16	30
Ethylene	269	293		ug/L		109	75 - 125	25	30
Methane	154	154		ug/L		100	75 - 125	13	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-302362/1-A
Matrix: Water
Analysis Batch: 302750

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 302362

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		11/08/13 11:32	11/11/13 22:02	1
Iron, Dissolved	0.050	U	0.050		mg/L		11/08/13 11:32	11/11/13 22:02	1
Manganese	0.010	U	0.010		mg/L		11/08/13 11:32	11/11/13 22:02	1
Manganese, Dissolved	0.010	U	0.010		mg/L		11/08/13 11:32	11/11/13 22:02	1

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Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: LCS 680-302362/2-A
Matrix: Water
Analysis Batch: 302750

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 302362

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	4.94		mg/L		99	75 - 125
Iron, Dissolved	5.00	4.94		mg/L		99	75 - 125
Manganese	0.500	0.500		mg/L		100	75 - 125
Manganese, Dissolved	0.500	0.500		mg/L		100	75 - 125

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-303380/5
Matrix: Water
Analysis Batch: 303380

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			11/14/13 14:47	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			11/14/13 14:47	1

Lab Sample ID: LCS 680-303380/6
Matrix: Water
Analysis Batch: 303380

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	224		mg/L		90	80 - 120

Lab Sample ID: LCSD 680-303380/32
Matrix: Water
Analysis Batch: 303380

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	220		mg/L		88	80 - 120	2	30

Lab Sample ID: 680-95841-9 DU
Matrix: Water
Analysis Batch: 303380

Client Sample ID: BSA-MW-3D-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	440		492		mg/L		11	30
Carbon Dioxide, Free	29		34.8		mg/L		19	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-303120/47
Matrix: Water
Analysis Batch: 303120

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			11/13/13 15:15	1

Method: 325.2 - Chloride (Continued)

Lab Sample ID: LCS 680-303120/6
Matrix: Water
Analysis Batch: 303120

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.0		mg/L		100	85 - 115

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-301975/13
Matrix: Water
Analysis Batch: 301975

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			11/06/13 14:17	1

Lab Sample ID: LCS 680-301975/14
Matrix: Water
Analysis Batch: 301975

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.497	0.532		mg/L		107	90 - 110
Nitrate Nitrite as N	0.997	1.04		mg/L		104	90 - 110
Nitrite as N	0.500	0.505		mg/L		101	90 - 110

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-302385/44
Matrix: Water
Analysis Batch: 302385

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			11/08/13 13:09	1

Lab Sample ID: LCS 680-302385/35
Matrix: Water
Analysis Batch: 302385

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.1		mg/L		100	75 - 125

Lab Sample ID: 680-95841-1 MS
Matrix: Water
Analysis Batch: 302385

Client Sample ID: BSA-MW-1S-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	5.0	U	20.0	8.75	F	mg/L		44	75 - 125

Lab Sample ID: 680-95841-1 MSD
Matrix: Water
Analysis Batch: 302385

Client Sample ID: BSA-MW-1S-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	5.0	U	20.0	10.4	F	mg/L		52	75 - 125	17	30

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Method: 375.4 - Sulfate (Continued)

Lab Sample ID: 680-95841-5 DU
Matrix: Water
Analysis Batch: 302385

Client Sample ID: CPA-MW-2D-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	59		58.5		mg/L		0.5	30

Method: 415.1 - DOC

Lab Sample ID: MB 680-303261/6
Matrix: Water
Analysis Batch: 303261

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			11/13/13 14:43	1

Lab Sample ID: LCS 680-303261/5
Matrix: Water
Analysis Batch: 303261

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	17.3		mg/L		86	80 - 120

Method: 415.1 - TOC

Lab Sample ID: MB 680-303389/2
Matrix: Water
Analysis Batch: 303389

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			11/14/13 14:15	1

Lab Sample ID: LCS 680-303389/5
Matrix: Water
Analysis Batch: 303389

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	20.0		mg/L		100	80 - 120

Lab Sample ID: 680-95841-1 DU
Matrix: Water
Analysis Batch: 303389

Client Sample ID: BSA-MW-1S-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	7.2		7.06		mg/L		2	25

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QC Association Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

GC/MS VOA

Analysis Batch: 302958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95841-1	BSA-MW-1S-1113	Total/NA	Water	8260B	
680-95841-3	CPA-MW-1D-1113	Total/NA	Water	8260B	
680-95841-5	CPA-MW-2D-1113	Total/NA	Water	8260B	
680-95841-6	CPA-MW-2D-1113-AD	Total/NA	Water	8260B	
680-95841-8	CPA-MW-1D-1113-EB	Total/NA	Water	8260B	
680-95841-9	BSA-MW-3D-1113	Total/NA	Water	8260B	
680-95841-11	4Q13 LTM Trip Blank #2	Total/NA	Water	8260B	
LCS 680-302958/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-302958/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-302958/8	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 302324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95841-1	BSA-MW-1S-1113	Total/NA	Water	RSK-175	
680-95841-3	CPA-MW-1D-1113	Total/NA	Water	RSK-175	
680-95841-5	CPA-MW-2D-1113	Total/NA	Water	RSK-175	
680-95841-9	BSA-MW-3D-1113	Total/NA	Water	RSK-175	
LCS 680-302324/10	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-302324/8	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-302324/11	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-302324/9	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-302324/3	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 302362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95841-1	BSA-MW-1S-1113	Total Recoverable	Water	3005A	
680-95841-2	BSA-MW-1S-F(0.2)-1113	Dissolved	Water	3005A	
680-95841-3	CPA-MW-1D-1113	Total Recoverable	Water	3005A	
680-95841-4	CPA-MW-1D-F(0.2)-1113	Dissolved	Water	3005A	
680-95841-5	CPA-MW-2D-1113	Total Recoverable	Water	3005A	
680-95841-7	CPA-MW-2D-F(0.2)-1113	Dissolved	Water	3005A	
680-95841-9	BSA-MW-3D-1113	Total Recoverable	Water	3005A	
680-95841-10	BSA-MW-3D-F(0.2)-1113	Dissolved	Water	3005A	
LCS 680-302362/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-302362/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 302750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95841-1	BSA-MW-1S-1113	Total Recoverable	Water	6010C	302362
680-95841-2	BSA-MW-1S-F(0.2)-1113	Dissolved	Water	6010C	302362
680-95841-3	CPA-MW-1D-1113	Total Recoverable	Water	6010C	302362
680-95841-4	CPA-MW-1D-F(0.2)-1113	Dissolved	Water	6010C	302362
680-95841-5	CPA-MW-2D-1113	Total Recoverable	Water	6010C	302362
680-95841-7	CPA-MW-2D-F(0.2)-1113	Dissolved	Water	6010C	302362
680-95841-9	BSA-MW-3D-1113	Total Recoverable	Water	6010C	302362
680-95841-10	BSA-MW-3D-F(0.2)-1113	Dissolved	Water	6010C	302362

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Metals (Continued)

Analysis Batch: 302750 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-302362/2-A	Lab Control Sample	Total Recoverable	Water	6010C	302362
MB 680-302362/1-A	Method Blank	Total Recoverable	Water	6010C	302362

General Chemistry

Analysis Batch: 301975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95841-1	BSA-MW-1S-1113	Total/NA	Water	353.2	
680-95841-3	CPA-MW-1D-1113	Total/NA	Water	353.2	
680-95841-5	CPA-MW-2D-1113	Total/NA	Water	353.2	
680-95841-9	BSA-MW-3D-1113	Total/NA	Water	353.2	
LCS 680-301975/14	Lab Control Sample	Total/NA	Water	353.2	
MB 680-301975/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 302385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95841-1	BSA-MW-1S-1113	Total/NA	Water	375.4	
680-95841-1 MS	BSA-MW-1S-1113	Total/NA	Water	375.4	
680-95841-1 MSD	BSA-MW-1S-1113	Total/NA	Water	375.4	
680-95841-3	CPA-MW-1D-1113	Total/NA	Water	375.4	
680-95841-5	CPA-MW-2D-1113	Total/NA	Water	375.4	
680-95841-5 DU	CPA-MW-2D-1113	Total/NA	Water	375.4	
680-95841-9	BSA-MW-3D-1113	Total/NA	Water	375.4	
LCS 680-302385/35	Lab Control Sample	Total/NA	Water	375.4	
MB 680-302385/44	Method Blank	Total/NA	Water	375.4	

Analysis Batch: 303120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95841-1	BSA-MW-1S-1113	Total/NA	Water	325.2	
680-95841-3	CPA-MW-1D-1113	Total/NA	Water	325.2	
680-95841-5	CPA-MW-2D-1113	Total/NA	Water	325.2	
680-95841-9	BSA-MW-3D-1113	Total/NA	Water	325.2	
LCS 680-303120/6	Lab Control Sample	Total/NA	Water	325.2	
MB 680-303120/47	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 303261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95841-2	BSA-MW-1S-F(0.2)-1113	Dissolved	Water	415.1	
680-95841-4	CPA-MW-1D-F(0.2)-1113	Dissolved	Water	415.1	
680-95841-7	CPA-MW-2D-F(0.2)-1113	Dissolved	Water	415.1	
680-95841-10	BSA-MW-3D-F(0.2)-1113	Dissolved	Water	415.1	
LCS 680-303261/5	Lab Control Sample	Dissolved	Water	415.1	
MB 680-303261/6	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 303380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95841-1	BSA-MW-1S-1113	Total/NA	Water	310.1	
680-95841-3	CPA-MW-1D-1113	Total/NA	Water	310.1	
680-95841-5	CPA-MW-2D-1113	Total/NA	Water	310.1	
680-95841-9	BSA-MW-3D-1113	Total/NA	Water	310.1	

General Chemistry (Continued)

Analysis Batch: 303380 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95841-9 DU	BSA-MW-3D-1113	Total/NA	Water	310.1	
LCS 680-303380/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-303380/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-303380/5	Method Blank	Total/NA	Water	310.1	

Analysis Batch: 303389

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95841-1	BSA-MW-1S-1113	Total/NA	Water	415.1	
680-95841-1 DU	BSA-MW-1S-1113	Total/NA	Water	415.1	
680-95841-3	CPA-MW-1D-1113	Total/NA	Water	415.1	
680-95841-5	CPA-MW-2D-1113	Total/NA	Water	415.1	
680-95841-9	BSA-MW-3D-1113	Total/NA	Water	415.1	
LCS 680-303389/5	Lab Control Sample	Total/NA	Water	415.1	
MB 680-303389/2	Method Blank	Total/NA	Water	415.1	

Client Sample ID: BSA-MW-1S-1113

Lab Sample ID: 680-95841-1

Date Collected: 11/05/13 10:20
Matrix: Water
Date Received: 11/06/13 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		10000	302958	11/13/13 17:35	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302324	11/08/13 13:35	AJMC	TAL SAV
Total Recoverable	Prep	3005A			302362	11/08/13 11:32	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	302750	11/11/13 23:01	BCB	TAL SAV
Total/NA	Analysis	353.2		1	301975	11/06/13 14:38	CRW	TAL SAV
Total/NA	Analysis	375.4		1	302385	11/08/13 12:34	JME	TAL SAV
Total/NA	Analysis	325.2		1	303120	11/13/13 13:25	JME	TAL SAV
Total/NA	Analysis	310.1		1	303380	11/14/13 17:01	LBH	TAL SAV
Total/NA	Analysis	415.1		1	303389	11/14/13 15:14	CMP	TAL SAV

Client Sample ID: BSA-MW-1S-F(0.2)-1113

Lab Sample ID: 680-95841-2

Date Collected: 11/05/13 10:20
Matrix: Water
Date Received: 11/06/13 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302362	11/08/13 11:32	BJB	TAL SAV
Dissolved	Analysis	6010C		1	302750	11/11/13 23:24	BCB	TAL SAV
Dissolved	Analysis	415.1		1	303261	11/13/13 17:42	CMP	TAL SAV

Client Sample ID: CPA-MW-1D-1113

Lab Sample ID: 680-95841-3

Date Collected: 11/05/13 13:45
Matrix: Water
Date Received: 11/06/13 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	302958	11/13/13 18:07	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302324	11/08/13 17:39	AJMC	TAL SAV
Total Recoverable	Prep	3005A			302362	11/08/13 11:32	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	302750	11/11/13 23:29	BCB	TAL SAV
Total/NA	Analysis	353.2		1	301975	11/06/13 14:52	CRW	TAL SAV
Total/NA	Analysis	375.4		1	302385	11/08/13 11:28	JME	TAL SAV
Total/NA	Analysis	325.2		2	303120	11/13/13 15:02	JME	TAL SAV
Total/NA	Analysis	310.1		1	303380	11/14/13 17:11	LBH	TAL SAV
Total/NA	Analysis	415.1		1	303389	11/14/13 15:39	CMP	TAL SAV

Client Sample ID: CPA-MW-1D-F(0.2)-1113

Lab Sample ID: 680-95841-4

Date Collected: 11/05/13 13:45
Matrix: Water
Date Received: 11/06/13 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302362	11/08/13 11:32	BJB	TAL SAV
Dissolved	Analysis	6010C		1	302750	11/11/13 23:33	BCB	TAL SAV

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Client Sample ID: CPA-MW-1D-F(0.2)-1113

Lab Sample ID: 680-95841-4

Date Collected: 11/05/13 13:45
Date Received: 11/06/13 09:37

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	303261	11/13/13 17:56	CMP	TAL SAV

Client Sample ID: CPA-MW-2D-1113

Lab Sample ID: 680-95841-5

Date Collected: 11/05/13 12:05
Date Received: 11/06/13 09:37

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	302958	11/13/13 18:37	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302324	11/08/13 17:26	AJMC	TAL SAV
Total Recoverable	Prep	3005A			302362	11/08/13 11:32	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	302750	11/11/13 23:38	BCB	TAL SAV
Total/NA	Analysis	353.2		1	301975	11/06/13 14:40	CRW	TAL SAV
Total/NA	Analysis	375.4		5	302385	11/08/13 12:38	JME	TAL SAV
Total/NA	Analysis	325.2		1	303120	11/13/13 13:35	JME	TAL SAV
Total/NA	Analysis	310.1		1	303380	11/14/13 17:20	LBH	TAL SAV
Total/NA	Analysis	415.1		1	303389	11/14/13 15:53	CMP	TAL SAV

Client Sample ID: CPA-MW-2D-1113-AD

Lab Sample ID: 680-95841-6

Date Collected: 11/05/13 12:05
Date Received: 11/06/13 09:37

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		250	302958	11/13/13 19:09	JD1	TAL SAV

Client Sample ID: CPA-MW-2D-F(0.2)-1113

Lab Sample ID: 680-95841-7

Date Collected: 11/05/13 12:05
Date Received: 11/06/13 09:37

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302362	11/08/13 11:32	BJB	TAL SAV
Dissolved	Analysis	6010C		1	302750	11/11/13 23:43	BCB	TAL SAV
Dissolved	Analysis	415.1		1	303261	11/13/13 18:11	CMP	TAL SAV

Client Sample ID: CPA-MW-1D-1113-EB

Lab Sample ID: 680-95841-8

Date Collected: 11/05/13 12:50
Date Received: 11/06/13 09:37

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	302958	11/13/13 13:34	JD1	TAL SAV

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Client Sample ID: BSA-MW-3D-1113

Lab Sample ID: 680-95841-9

Date Collected: 11/05/13 15:20
Matrix: Water
Date Received: 11/06/13 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		50	302958	11/13/13 19:38	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302324	11/08/13 17:13	AJMC	TAL SAV
Total Recoverable	Prep	3005A			302362	11/08/13 11:32	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	302750	11/11/13 23:47	BCB	TAL SAV
Total/NA	Analysis	353.2		1	301975	11/06/13 14:47	CRW	TAL SAV
Total/NA	Analysis	375.4		5	302385	11/08/13 12:40	JME	TAL SAV
Total/NA	Analysis	325.2		2	303120	11/13/13 15:02	JME	TAL SAV
Total/NA	Analysis	310.1		1	303380	11/14/13 17:28	LBH	TAL SAV
Total/NA	Analysis	415.1		1	303389	11/14/13 16:09	CMP	TAL SAV

Client Sample ID: BSA-MW-3D-F(0.2)-1113

Lab Sample ID: 680-95841-10

Date Collected: 11/05/13 15:20
Matrix: Water
Date Received: 11/06/13 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302362	11/08/13 11:32	BJB	TAL SAV
Dissolved	Analysis	6010C		1	302750	11/11/13 23:52	BCB	TAL SAV
Dissolved	Analysis	415.1		1	303261	11/13/13 18:27	CMP	TAL SAV

Client Sample ID: 4Q13 LTM Trip Blank #2

Lab Sample ID: 680-95841-11

Date Collected: 11/05/13 00:00
Matrix: Water
Date Received: 11/06/13 09:37

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	302958	11/13/13 14:04	JD1	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

DEC 05 2013

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/5/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) a			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260B	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
BSA-MW-1S-1113	11/5/13	1020	G	Water	12		3	1	1	1	3	2	1			
BSA-MW-1S-F(0.2)-1113		1020	G	Water	2	X								1	1	
CPA-MW-1D-1113		1345	G	Water	12		3	1	1	1	3	2	1			
CPA-MW-1D-F(0.2)-1113		1345	G	Water	2	X								1	1	
CPA-MW-2D-1113		1205	G	Water	12		3	1	1	1	3	2	1			
CPA-MW-2D-1113-AD		1205	G	Water	3		3									
CPA-MW-2D-F(0.2)-1113		1205	G	Water	2	X								1	1	
CPA-MW-1D-1113-EB		1250	G	Water	3		3									
BSA-MW-3D-1113		1530	G	Water	12		3	1	1	1	3	2	1			
BSA-MW-3D-F(0.2)-1113		1530	G	Water	2	X								1	1	
4Q13 LTM Trip Blank # 2	11/5/13	—	—	Water	2		2									
							2	4	1	1	1	3,1	2	4	2	

680-95841 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ ison B ☐ known

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements & Comments:

2.6°C

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	11/5/13 1615	[signature]	TA SAV.	11/06/13 0937
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

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Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-95841-1
SDG Number: KPS098

Login Number: 95841
List Number: 1
Creator: Banda, Christy S

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Certification Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95841-1
SDG: KPS098

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	02-01-14
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-13 *
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13 *
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	06-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13 *
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky	State Program	4	90084	12-31-13 *
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13 *
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-14 *
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13 *
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia	State Program	3	9950C	12-31-13 *
West Virginia DEP	State Program	3	94	06-30-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

* Expired certification is currently pending renewal and is considered valid.

DEC 05 2013

Solutia Krummrich Data Review
WGK LTM 4Q13

Laboratory SDG: KPS099

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 12/06/2013

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund Inorganic Data Review 2010

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009)

Sample Identification	
BSA-MW-2D-1113	BSA-MW-2D-F(0.2)-1113
CPA-MW-3D-1113	CPA-MW-3D-F(0.2)-1113
BSA-MW-2D-EB	CPA-MW-3D-1113-AD
4Q13 LTM Trip Blank #3	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated samples were diluted due to high levels of target analytes. Although not indicated in the laboratory case narrative, VOCs were detected in the equipment blank. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that one of one coolers were received by the laboratory at a temperature of 0.6°C, which is outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore no qualification of data was required. Two out of three VOA vials for samples BSA-MW-2D-1113 and CPA-MW-3D-1113 were received by the laboratory with headspace. The remaining vials without headspace contained sufficient sample to complete all requested analyses; therefore no qualification of data was required. Dissolved metals and dissolved organic carbon samples BSA-MW-2D-F(0.2)-1113 and CPA-MW-3DF(0.2)-1113; total metals sample BSA-MW-2D-1113 and CPA-MW-3D-1113; and total organic carbon samples BSA-MW-2D-1113 and BSA-MW-5D-1113 were measured at pH>2. Please see section 11.0 of this review for qualifications due to pH>2.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration/Amount
BSA-MW-2D-EB	VOCs	Benzene	9.1 ug/L
BSA-MW-2D-EB	VOCs	Chlorobenzene	4.1 ug/L
BSA-MW-2D-EB	VOCs	1,2-Dichlorobenzene	5.1 ug/L
BSA-MW-2D-EB	VOCs	1,4-Dichlorobenzene	5.9 ug/L

Analytical data reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification. No qualification of data was required.

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, although not requested, sample BSA-MW-2D-1113 was analyzed for nitrate.

Were MS/MSD recoveries within evaluation criteria?

Yes

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

Yes, sample BSA-MW-2D-1113 was duplicated and analyzed for total organic carbon.

Were laboratory duplicate sample RPDs within criteria?

Yes

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
CPA-MW-3D-1113	CPA-MW-3D-1113-AD

Were field duplicates within evaluation criteria?

Yes

10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

11.0 Additional Qualifications

Were additional qualifications applied?

Yes, the following samples are qualified, as summarized below, due to pH > 2.

Sample ID	Parameter	Analyte	Qualification
BSA-MW-2D-1113	Total metals	Iron	**J**
BSA-MW-2D-1113	Total metals	Manganese	**J**
BSA-MW-2D-1113	General chemistry	Total organic carbon	**J**
BSA-MW-2D-F(0.2)-1113	Dissolved metals	Iron	**J**
BSA-MW-2D-F(0.2)-1113	Dissolved metals	Manganese	**J**
BSA-MW-2D-F(0.2)-1113	General chemistry	Dissolved organic carbon	**J**
CPA-MW-3D-1113	Total metals	Iron	**J**
CPA-MW-3D-1113	Total metals	Manganese	**J**
CPA-MW-3D-F(0.2)-1113	Dissolved metals	Iron	**J**
CPA-MW-3D-F(0.2)-1113	Dissolved metals	Manganese	**J**
CPA-MW-3D-F(0.2)-1113	General chemistry	Dissolved organic carbon	**J**

SDG KPS099

Results of Samples from Monitoring Well:

BSA-MW-2D
CPA-MW-3D

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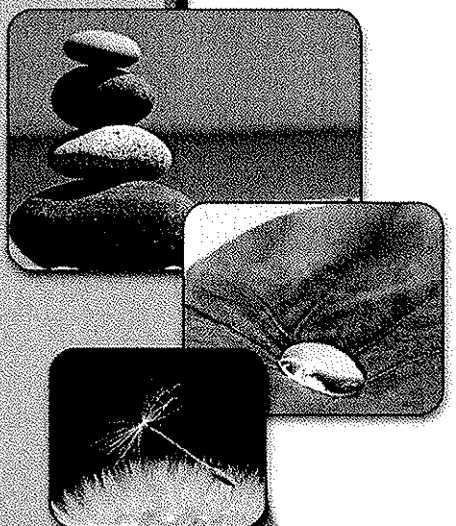

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-95908-1
TestAmerica Sample Delivery Group: KPS099
Client Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
11/26/2013 2:42:47 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

Reviewed on DEC 0 6 2013

LINKS

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www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

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CASE NARRATIVE

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 4Q13 NOV 2013

Report Number: 680-95908-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 11/7/2013 10:01 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.6° C.

Except:

Method(s) 8260B: The following sample(s) was received with headspace in the sample vial: BSA-MW-2D-1113 (680-95908-1), CPA-MW-3D-1113 (680-95908-3).Two vials have headspace in them.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples BSA-MW-2D-1113 (680-95908-1), CPA-MW-3D-1113 (680-95908-3), BSA-MW-2D-EB (680-95908-5), CPA-MW-3D-1113-AD (680-95908-6) and 4Q13 LTM Trip Blank # 3 (680-95908-7) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/13/2013, 11/14/2013 and 11/15/2013.

Samples BSA-MW-2D-1113 (680-95908-1)[2000X], CPA-MW-3D-1113 (680-95908-3)[100X] and CPA-MW-3D-1113-AD (680-95908-6) [50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED GASES
Samples BSA-MW-2D-1113 (680-95908-1) and CPA-MW-3D-1113 (680-95908-3) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 11/10/2013 and 11/11/2013.

No difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

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METALS (ICP)
Samples BSA-MW-2D-F(0.2)-1113 (680-95908-2) and CPA-MW-3D-F(0.2)-1113 (680-95908-4) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/08/2013 and analyzed on 11/12/2013.

Job ID: 680-95908-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

METALS (ICP)
Samples BSA-MW-2D-1113 (680-95908-1) and CPA-MW-3D-1113 (680-95908-3) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/08/2013 and analyzed on 11/11/2013 and 11/12/2013.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

ALKALINITY
Samples BSA-MW-2D-1113 (680-95908-1) and CPA-MW-3D-1113 (680-95908-3) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 11/14/2013.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

CHLORIDE
Samples BSA-MW-2D-1113 (680-95908-1) and CPA-MW-3D-1113 (680-95908-3) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 11/13/2013.

Samples BSA-MW-2D-1113 (680-95908-1)[2X] and CPA-MW-3D-1113 (680-95908-3)[5X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

NITRATE-NITRITE AS NITROGEN
Samples BSA-MW-2D-1113 (680-95908-1) and CPA-MW-3D-1113 (680-95908-3) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 11/07/2013.

No difficulties were encountered during the nitrate-nitrite analysis.

All quality control parameters were within the acceptance limits.

SULFATE
Samples BSA-MW-2D-1113 (680-95908-1) and CPA-MW-3D-1113 (680-95908-3) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 11/08/2013.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON
Samples BSA-MW-2D-1113 (680-95908-1) and CPA-MW-3D-1113 (680-95908-3) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 11/16/2013.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

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Job ID: 680-95908-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

DISSOLVED ORGANIC CARBON (DOC)

Samples BSA-MW-2D-F(0.2)-1113 (680-95908-2) and CPA-MW-3D-F(0.2)-1113 (680-95908-4) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 11/13/2013.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

DEC 06 2013

Sample Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-95908-1	BSA-MW-2D-1113	Water	11/06/13 11:55	11/07/13 10:01
680-95908-2	BSA-MW-2D-F(0.2)-1113	Water	11/06/13 11:55	11/07/13 10:01
680-95908-3	CPA-MW-3D-1113	Water	11/06/13 14:20	11/07/13 10:01
680-95908-4	CPA-MW-3D-F(0.2)-1113	Water	11/06/13 14:20	11/07/13 10:01
680-95908-5	BSA-MW-2D-EB	Water	11/06/13 10:45	11/07/13 10:01
680-95908-6	CPA-MW-3D-1113-AD	Water	11/06/13 14:20	11/07/13 10:01
680-95908-7	4Q13 LTM Trip Blank # 3	Water	11/06/13 00:00	11/07/13 10:01

DEC 06 2013

TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

DEC 06 2013

TestAmerica Savannah

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

DEC 06 2013

TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

Client Sample ID: BSA-MW-2D-1113 — Lab Sample ID: 680-95908-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	100000		2000		ug/L	2000		8260B	Total/NA
Ethane	14		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	11000		0.58		ug/L	1		RSK-175	Total/NA
Iron	3.6		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.55		0.010		mg/L	1		6010C	Total Recoverable
Chloride	100		2.0		mg/L	2		325.2	Total/NA
Total Organic Carbon	6.1		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	650		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	30		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: BSA-MW-2D-F(0.2)-1113 — Lab Sample ID: 680-95908-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	3.7		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.56		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	5.5		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: CPA-MW-3D-1113 — Lab Sample ID: 680-95908-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3800		100		ug/L	100		8260B	Total/NA
Chlorobenzene	290		100		ug/L	100		8260B	Total/NA
Ethane	22		1.1		ug/L	1		RSK-175	Total/NA
Methane (TCD)	20000		0.58		ug/L	1		RSK-175	Total/NA
Iron	12		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.74		0.010		mg/L	1		6010C	Total Recoverable
Chloride	310		5.0		mg/L	5		325.2	Total/NA
Total Organic Carbon	8.2		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	620		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	42		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: CPA-MW-3D-F(0.2)-1113 — Lab Sample ID: 680-95908-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	12		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.72		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	8.2		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: BSA-MW-2D-EB — Lab Sample ID: 680-95908-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	9.1		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene	4.1		1.0		ug/L	1		8260B	Total/NA
1,2-Dichlorobenzene	5.1		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	5.9		1.0		ug/L	1		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

DEC 06 2013

Detection Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

Client Sample ID: CPA-MW-3D-1113-AD

Lab Sample ID: 680-95908-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	3700		50		ug/L	50		8260B	Total/NA
Chlorobenzene	300		50		ug/L	50		8260B	Total/NA

Client Sample ID: 4Q13 LTM Trip Blank # 3

Lab Sample ID: 680-95908-7

No Detections.

This Detection Summary does not include radiochemical test results.

DEC 06

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

Client Sample ID: BSA-MW-2D-1113
Date Collected: 11/06/13 11:55
Date Received: 11/07/13 10:01

Lab Sample ID: 680-95908-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**100000**		2000		ug/L			11/14/13 18:44	2000
Chlorobenzene	2000	U	2000		ug/L			11/14/13 18:44	2000
1,2-Dichlorobenzene	2000	U	2000		ug/L			11/14/13 18:44	2000
1,3-Dichlorobenzene	2000	U	2000		ug/L			11/14/13 18:44	2000
1,4-Dichlorobenzene	2000	U	2000		ug/L			11/14/13 18:44	2000

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*11/14/13 18:44*	*2000*
Dibromofluoromethane	*103*		*70 - 130*		*11/14/13 18:44*	*2000*
Toluene-d8 (Surr)	*95*		*70 - 130*		*11/14/13 18:44*	*2000*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**14**		1.1		ug/L			11/10/13 16:54	1
Ethylene	1.0	U	1.0		ug/L			11/10/13 16:54	1
Methane (TCD)	**11000**		0.58		ug/L			11/10/13 16:54	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**3.6**		0.050		mg/L		11/08/13 11:32	11/11/13 23:57	1
Manganese	**0.55**		0.010		mg/L		11/08/13 11:32	11/11/13 23:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**100**		2.0		mg/L			11/13/13 15:02	2
Nitrate as N	0.050	U	0.050		mg/L			11/07/13 17:24	1
Sulfate	5.0	U	5.0		mg/L			11/08/13 11:32	1
Total Organic Carbon	**6.1**		1.0		mg/L			11/16/13 20:25	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**650**		5.0		mg/L			11/14/13 17:51	1
Carbon Dioxide, Free	**30**		5.0		mg/L			11/14/13 17:51	1

DEC 06 2013

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

Client Sample ID: BSA-MW-2D-F(0.2)-1113
Date Collected: 11/06/13 11:55
Date Received: 11/07/13 10:01

Lab Sample ID: 680-95908-2
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	3.7	J	0.050		mg/L		11/08/13 11:32	11/12/13 00:01	1
Manganese, Dissolved	0.56	J	0.010		mg/L		11/08/13 11:32	11/12/13 00:01	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	5.5	J	1.0		mg/L			11/13/13 18:45	1

DEC 06 2013

Client Sample ID: CPA-MW-3D-1113
Date Collected: 11/06/13 14:20
Date Received: 11/07/13 10:01

Lab Sample ID: 680-95908-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**3800**		100		ug/L			11/13/13 20:40	100
Chlorobenzene	**290**		100		ug/L			11/13/13 20:40	100
1,2-Dichlorobenzene	100	U	100		ug/L			11/13/13 20:40	100
1,3-Dichlorobenzene	100	U	100		ug/L			11/13/13 20:40	100
1,4-Dichlorobenzene	100	U	100		ug/L			11/13/13 20:40	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*105*		*70 - 130*		*11/13/13 20:40*	*100*
Dibromofluoromethane	*98*		*70 - 130*		*11/13/13 20:40*	*100*
Toluene-d8 (Surr)	*94*		*70 - 130*		*11/13/13 20:40*	*100*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	**22**		1.1		ug/L			11/11/13 12:27	1
Ethylene	1.0	U	1.0		ug/L			11/11/13 12:27	1
Methane (TCD)	**20000**		0.58		ug/L			11/11/13 12:27	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**12**	J	0.050		mg/L		11/08/13 11:32	11/12/13 00:06	1
Manganese	**0.74**	J	0.010		mg/L		11/08/13 11:32	11/12/13 00:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**310**		5.0		mg/L			11/13/13 14:53	5
Nitrate as N	0.050	U	0.050		mg/L			11/07/13 17:30	1
Sulfate	5.0	U	5.0		mg/L			11/08/13 11:32	1
Total Organic Carbon	**8.2**		1.0		mg/L			11/16/13 20:50	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**620**		5.0		mg/L			11/14/13 18:01	1
Carbon Dioxide, Free	**42**		5.0		mg/L			11/14/13 18:01	1

DEC 06 2013

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

Client Sample ID: CPA-MW-3D-F(0.2)-1113
Date Collected: 11/06/13 14:20
Date Received: 11/07/13 10:01

Lab Sample ID: 680-95908-4
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	12	J	0.050		mg/L		11/08/13 11:32	11/12/13 00:20	1
Manganese, Dissolved	0.72	J	0.010		mg/L		11/08/13 11:32	11/12/13 00:20	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	8.2	J	1.0		mg/L			11/13/13 18:59	1

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Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

Client Sample ID: BSA-MW-2D-EB
Date Collected: 11/06/13 10:45
Date Received: 11/07/13 10:01

Lab Sample ID: 680-95908-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	9.1		1.0		ug/L			11/13/13 15:05	1
Chlorobenzene	4.1		1.0		ug/L			11/13/13 15:05	1
1,2-Dichlorobenzene	5.1		1.0		ug/L			11/13/13 15:05	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 15:05	1
1,4-Dichlorobenzene	5.9		1.0		ug/L			11/13/13 15:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*114*		*70 - 130*		*11/13/13 15:05*	*1*
Dibromofluoromethane	*97*		*70 - 130*		*11/13/13 15:05*	*1*
Toluene-d8 (Surr)	*93*		*70 - 130*		*11/13/13 15:05*	*1*

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Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

Client Sample ID: CPA-MW-3D-1113-AD
Date Collected: 11/06/13 14:20
Date Received: 11/07/13 10:01

Lab Sample ID: 680-95908-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**3700**		50		ug/L			11/15/13 19:48	50
Chlorobenzene	**300**		50		ug/L			11/15/13 19:48	50
1,2-Dichlorobenzene	50	U	50		ug/L			11/15/13 19:48	50
1,3-Dichlorobenzene	50	U	50		ug/L			11/15/13 19:48	50
1,4-Dichlorobenzene	50	U	50		ug/L			11/15/13 19:48	50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*95*		*70 - 130*		*11/15/13 19:48*	*50*
Dibromofluoromethane	*102*		*70 - 130*		*11/15/13 19:48*	*50*
Toluene-d8 (Surr)	*90*		*70 - 130*		*11/15/13 19:48*	*50*

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

Client Sample ID: 4Q13 LTM Trip Blank # 3
Date Collected: 11/06/13 00:00
Date Received: 11/07/13 10:01

Lab Sample ID: 680-95908-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/13/13 14:36	1
Chlorobenzene	1.0	U	1.0		ug/L			11/13/13 14:36	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 14:36	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 14:36	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 14:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*108*		*70 - 130*		*11/13/13 14:36*	*1*
Dibromofluoromethane	*98*		*70 - 130*		*11/13/13 14:36*	*1*
Toluene-d8 (Surr)	*95*		*70 - 130*		*11/13/13 14:36*	*1*

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Surrogate Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
680-95908-1	BSA-MW-2D-1113	99	103	95
680-95908-3	CPA-MW-3D-1113	105	98	94
680-95908-5	BSA-MW-2D-EB	114	97	93
680-95908-6	CPA-MW-3D-1113-AD	95	102	90
680-95908-7	4Q13 LTM Trip Blank # 3	108	98	95
LCS 680-302958/4	Lab Control Sample	100	107	98
LCS 680-303240/4	Lab Control Sample	106	109	101
LCS 680-303411/4	Lab Control Sample	102	103	97
LCSD 680-302958/5	Lab Control Sample Dup	107	100	104
LCSD 680-303240/12	Lab Control Sample Dup	105	104	102
LCSD 680-303411/5	Lab Control Sample Dup	102	109	100
MB 680-302958/8	Method Blank	108	106	92
MB 680-303240/8	Method Blank	92	107	90
MB 680-303411/9	Method Blank	96	108	90

Surrogate Legend

BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

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Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-302958/8
Matrix: Water
Analysis Batch: 302958

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/13/13 12:33	1
Chlorobenzene	1.0	U	1.0		ug/L			11/13/13 12:33	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 12:33	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 12:33	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/13/13 12:33	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*108*		*70 - 130*		*11/13/13 12:33*	*1*
Dibromofluoromethane	*106*		*70 - 130*		*11/13/13 12:33*	*1*
Toluene-d8 (Surr)	*92*		*70 - 130*		*11/13/13 12:33*	*1*

Lab Sample ID: LCS 680-302958/4
Matrix: Water
Analysis Batch: 302958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.4		ug/L		97	74 - 123
Chlorobenzene	50.0	55.7		ug/L		111	79 - 120
1,2-Dichlorobenzene	50.0	46.9		ug/L		94	77 - 124
1,3-Dichlorobenzene	50.0	49.5		ug/L		99	79 - 123
1,4-Dichlorobenzene	50.0	48.7		ug/L		97	76 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*100*		*70 - 130*
Dibromofluoromethane	*107*		*70 - 130*
Toluene-d8 (Surr)	*98*		*70 - 130*

Lab Sample ID: LCSD 680-302958/5
Matrix: Water
Analysis Batch: 302958

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	49.4		ug/L		99	74 - 123	2	30
Chlorobenzene	50.0	56.1		ug/L		112	79 - 120	1	30
1,2-Dichlorobenzene	50.0	54.0		ug/L		108	77 - 124	14	30
1,3-Dichlorobenzene	50.0	55.7		ug/L		111	79 - 123	12	30
1,4-Dichlorobenzene	50.0	53.9		ug/L		108	76 - 124	10	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*107*		*70 - 130*
Dibromofluoromethane	*100*		*70 - 130*
Toluene-d8 (Surr)	*104*		*70 - 130*

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Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-303240/8
Matrix: Water
Analysis Batch: 303240

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/14/13 15:28	1
Chlorobenzene	1.0	U	1.0		ug/L			11/14/13 15:28	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/14/13 15:28	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/14/13 15:28	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/14/13 15:28	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*92*		*70 - 130*		*11/14/13 15:28*	*1*
Dibromofluoromethane	*107*		*70 - 130*		*11/14/13 15:28*	*1*
Toluene-d8 (Surr)	*90*		*70 - 130*		*11/14/13 15:28*	*1*

Lab Sample ID: LCS 680-303240/4
Matrix: Water
Analysis Batch: 303240

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	45.1		ug/L		90	74 - 123
Chlorobenzene	50.0	55.6		ug/L		111	79 - 120
1,2-Dichlorobenzene	50.0	59.1		ug/L		118	77 - 124
1,3-Dichlorobenzene	50.0	59.8		ug/L		120	79 - 123
1,4-Dichlorobenzene	50.0	60.8		ug/L		122	76 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*106*		*70 - 130*
Dibromofluoromethane	*109*		*70 - 130*
Toluene-d8 (Surr)	*101*		*70 - 130*

Lab Sample ID: LCSD 680-303240/12
Matrix: Water
Analysis Batch: 303240

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	43.4		ug/L		87	74 - 123	4	30
Chlorobenzene	50.0	53.7		ug/L		107	79 - 120	3	30
1,2-Dichlorobenzene	50.0	58.0		ug/L		116	77 - 124	2	30
1,3-Dichlorobenzene	50.0	59.5		ug/L		119	79 - 123	1	30
1,4-Dichlorobenzene	50.0	59.6		ug/L		119	76 - 124	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*105*		*70 - 130*
Dibromofluoromethane	*104*		*70 - 130*
Toluene-d8 (Surr)	*102*		*70 - 130*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-303411/9
Matrix: Water
Analysis Batch: 303411

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/15/13 14:39	1
Chlorobenzene	1.0	U	1.0		ug/L			11/15/13 14:39	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/15/13 14:39	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/15/13 14:39	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/15/13 14:39	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*96*		*70 - 130*		*11/15/13 14:39*	*1*
Dibromofluoromethane	*108*		*70 - 130*		*11/15/13 14:39*	*1*
Toluene-d8 (Surr)	*90*		*70 - 130*		*11/15/13 14:39*	*1*

Lab Sample ID: LCS 680-303411/4
Matrix: Water
Analysis Batch: 303411

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	43.2		ug/L		86	74 - 123
Chlorobenzene	50.0	52.6		ug/L		105	79 - 120
1,2-Dichlorobenzene	50.0	57.7		ug/L		115	77 - 124
1,3-Dichlorobenzene	50.0	58.2		ug/L		116	79 - 123
1,4-Dichlorobenzene	50.0	58.4		ug/L		117	76 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*102*		*70 - 130*
Dibromofluoromethane	*103*		*70 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*

Lab Sample ID: LCSD 680-303411/5
Matrix: Water
Analysis Batch: 303411

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	44.8		ug/L		90	74 - 123	4	30
Chlorobenzene	50.0	54.8		ug/L		110	79 - 120	4	30
1,2-Dichlorobenzene	50.0	55.3		ug/L		111	77 - 124	4	30
1,3-Dichlorobenzene	50.0	56.1		ug/L		112	79 - 123	4	30
1,4-Dichlorobenzene	50.0	56.2		ug/L		112	76 - 124	4	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*102*		*70 - 130*
Dibromofluoromethane	*109*		*70 - 130*
Toluene-d8 (Surr)	*100*		*70 - 130*

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Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-302484/4
Matrix: Water
Analysis Batch: 302484

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/10/13 12:38	1
Ethylene	1.0	U	1.0		ug/L			11/10/13 12:38	1
Methane	0.58	U	0.58		ug/L			11/10/13 12:38	1
Methane (TCD)	0.58	U	0.58		ug/L			11/10/13 12:38	1

Lab Sample ID: LCS 680-302484/6
Matrix: Water
Analysis Batch: 302484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	288		ug/L		100	75 - 125
Ethylene	269	253		ug/L		94	75 - 125
Methane	154	149		ug/L		97	75 - 125

Lab Sample ID: LCS 680-302484/7
Matrix: Water
Analysis Batch: 302484

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1950		ug/L		101	75 - 125

Lab Sample ID: LCSD 680-302484/8
Matrix: Water
Analysis Batch: 302484

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	2040		ug/L		106	75 - 125	5	30

Lab Sample ID: LCSD 680-302484/9
Matrix: Water
Analysis Batch: 302484

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	258		ug/L		89	75 - 125	11	30
Ethylene	269	221		ug/L		82	75 - 125	14	30
Methane	154	134		ug/L		87	75 - 125	11	30

Lab Sample ID: MB 680-302485/3
Matrix: Water
Analysis Batch: 302485

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/11/13 09:53	1
Ethylene	1.0	U	1.0		ug/L			11/11/13 09:53	1
Methane	0.58	U	0.58		ug/L			11/11/13 09:53	1
Methane (TCD)	0.58	U	0.58		ug/L			11/11/13 09:53	1

Method: RSK-175 - Dissolved Gases (GC) (Continued)

Lab Sample ID: LCS 680-302485/4
Matrix: Water
Analysis Batch: 302485

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	285		ug/L		99	75 - 125
Ethylene	269	266		ug/L		99	75 - 125
Methane	154	144		ug/L		93	75 - 125

Lab Sample ID: LCS 680-302485/6
Matrix: Water
Analysis Batch: 302485

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane (TCD)	1920	1920		ug/L		100	75 - 125

Lab Sample ID: LCSD 680-302485/5
Matrix: Water
Analysis Batch: 302485

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	287		ug/L		99	75 - 125	1	30
Ethylene	269	267		ug/L		99	75 - 125	1	30
Methane	154	145		ug/L		95	75 - 125	1	30

Lab Sample ID: LCSD 680-302485/7
Matrix: Water
Analysis Batch: 302485

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methane (TCD)	1920	1880		ug/L		98	75 - 125	2	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-302362/1-A
Matrix: Water
Analysis Batch: 302750

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 302362

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		11/08/13 11:32	11/11/13 22:02	1
Iron, Dissolved	0.050	U	0.050		mg/L		11/08/13 11:32	11/11/13 22:02	1
Manganese	0.010	U	0.010		mg/L		11/08/13 11:32	11/11/13 22:02	1
Manganese, Dissolved	0.010	U	0.010		mg/L		11/08/13 11:32	11/11/13 22:02	1

Lab Sample ID: LCS 680-302362/2-A
Matrix: Water
Analysis Batch: 302750

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 302362

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	4.94		mg/L		99	75 - 125
Iron, Dissolved	5.00	4.94		mg/L		99	75 - 125
Manganese	0.500	0.500		mg/L		100	75 - 125
Manganese, Dissolved	0.500	0.500		mg/L		100	75 - 125

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Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-303380/5
Matrix: Water
Analysis Batch: 303380

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			11/14/13 14:47	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			11/14/13 14:47	1

Lab Sample ID: LCS 680-303380/6
Matrix: Water
Analysis Batch: 303380

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	224		mg/L		90	80 - 120

Lab Sample ID: LCSD 680-303380/32
Matrix: Water
Analysis Batch: 303380

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	220		mg/L		88	80 - 120	2	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-303120/47
Matrix: Water
Analysis Batch: 303120

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			11/13/13 15:15	1

Lab Sample ID: LCS 680-303120/6
Matrix: Water
Analysis Batch: 303120

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.0		mg/L		100	85 - 115

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-302253/13
Matrix: Water
Analysis Batch: 302253

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			11/07/13 17:22	1

Lab Sample ID: LCS 680-302253/14
Matrix: Water
Analysis Batch: 302253

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.497	0.515		mg/L		104	90 - 110
Nitrate Nitrite as N	0.997	1.02		mg/L		102	90 - 110

Method: 353.2 - Nitrogen, Nitrate-Nitrite (Continued)

Lab Sample ID: LCS 680-302253/14
Matrix: Water
Analysis Batch: 302253

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrite as N	0.500	0.504		mg/L		101	90 - 110

Lab Sample ID: 680-95908-1 MS
Matrix: Water
Analysis Batch: 302253

Client Sample ID: BSA-MW-2D-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.050	U	0.497	0.510		mg/L		103	90 - 110
Nitrate Nitrite as N	0.050		0.997	1.02		mg/L		103	90 - 110
Nitrite as N	0.050		0.500	0.512		mg/L		102	90 - 110

Lab Sample ID: 680-95908-1 MSD
Matrix: Water
Analysis Batch: 302253

Client Sample ID: BSA-MW-2D-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.050	U	0.497	0.508		mg/L		102	90 - 110	0	10
Nitrate Nitrite as N	0.050		0.997	1.02		mg/L		102	90 - 110	0	10
Nitrite as N	0.050		0.500	0.511		mg/L		102	90 - 110	0	10

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-302385/44
Matrix: Water
Analysis Batch: 302385

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			11/08/13 13:09	1

Lab Sample ID: LCS 680-302385/35
Matrix: Water
Analysis Batch: 302385

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.1		mg/L		100	75 - 125

Method: 415.1 - DOC

Lab Sample ID: MB 680-303261/6
Matrix: Water
Analysis Batch: 303261

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			11/13/13 14:43	1

Method: 415.1 - DOC (Continued)

Lab Sample ID: LCS 680-303261/5
Matrix: Water
Analysis Batch: 303261

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	17.3		mg/L		86	80 - 120

Method: 415.1 - TOC

Lab Sample ID: MB 680-303829/26
Matrix: Water
Analysis Batch: 303829

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			11/16/13 17:13	1

Lab Sample ID: LCS 680-303829/29
Matrix: Water
Analysis Batch: 303829

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	20.8		mg/L		104	80 - 120

Lab Sample ID: 680-95908-1 DU
Matrix: Water
Analysis Batch: 303829

Client Sample ID: BSA-MW-2D-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Organic Carbon	6.1		5.91		mg/L		3	25

QC Association Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

GC/MS VOA

Analysis Batch: 302958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95908-3	CPA-MW-3D-1113	Total/NA	Water	8260B	
680-95908-5	BSA-MW-2D-EB	Total/NA	Water	8260B	
680-95908-7	4Q13 LTM Trip Blank # 3	Total/NA	Water	8260B	
LCS 680-302958/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-302958/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-302958/8	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 303240

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95908-1	BSA-MW-2D-1113	Total/NA	Water	8260B	
LCS 680-303240/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-303240/12	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-303240/8	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 303411

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95908-6	CPA-MW-3D-1113-AD	Total/NA	Water	8260B	
LCS 680-303411/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-303411/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-303411/9	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 302484

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95908-1	BSA-MW-2D-1113	Total/NA	Water	RSK-175	
LCS 680-302484/6	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-302484/7	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-302484/8	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-302484/9	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-302484/4	Method Blank	Total/NA	Water	RSK-175	

Analysis Batch: 302485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95908-3	CPA-MW-3D-1113	Total/NA	Water	RSK-175	
LCS 680-302485/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCS 680-302485/6	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-302485/5	Lab Control Sample Dup	Total/NA	Water	RSK-175	
LCSD 680-302485/7	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-302485/3	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 302362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95908-1	BSA-MW-2D-1113	Total Recoverable	Water	3005A	
680-95908-2	BSA-MW-2D-F(0.2)-1113	Dissolved	Water	3005A	
680-95908-3	CPA-MW-3D-1113	Total Recoverable	Water	3005A	
680-95908-4	CPA-MW-3D-F(0.2)-1113	Dissolved	Water	3005A	
LCS 680-302362/2-A	Lab Control Sample	Total Recoverable	Water	3005A	

Metals (Continued)

Prep Batch: 302362 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 680-302362/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 302750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95908-1	BSA-MW-2D-1113	Total Recoverable	Water	6010C	302362
680-95908-2	BSA-MW-2D-F(0.2)-1113	Dissolved	Water	6010C	302362
680-95908-3	CPA-MW-3D-1113	Total Recoverable	Water	6010C	302362
680-95908-4	CPA-MW-3D-F(0.2)-1113	Dissolved	Water	6010C	302362
LCS 680-302362/2-A	Lab Control Sample	Total Recoverable	Water	6010C	302362
MB 680-302362/1-A	Method Blank	Total Recoverable	Water	6010C	302362

General Chemistry

Analysis Batch: 302253

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95908-1	BSA-MW-2D-1113	Total/NA	Water	353.2	
680-95908-1 MS	BSA-MW-2D-1113	Total/NA	Water	353.2	
680-95908-1 MSD	BSA-MW-2D-1113	Total/NA	Water	353.2	
680-95908-3	CPA-MW-3D-1113	Total/NA	Water	353.2	
LCS 680-302253/14	Lab Control Sample	Total/NA	Water	353.2	
MB 680-302253/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 302385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95908-1	BSA-MW-2D-1113	Total/NA	Water	375.4	
680-95908-3	CPA-MW-3D-1113	Total/NA	Water	375.4	
LCS 680-302385/35	Lab Control Sample	Total/NA	Water	375.4	
MB 680-302385/44	Method Blank	Total/NA	Water	375.4	

Analysis Batch: 303120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95908-1	BSA-MW-2D-1113	Total/NA	Water	325.2	
680-95908-3	CPA-MW-3D-1113	Total/NA	Water	325.2	
LCS 680-303120/6	Lab Control Sample	Total/NA	Water	325.2	
MB 680-303120/47	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 303261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95908-2	BSA-MW-2D-F(0.2)-1113	Dissolved	Water	415.1	
680-95908-4	CPA-MW-3D-F(0.2)-1113	Dissolved	Water	415.1	
LCS 680-303261/5	Lab Control Sample	Dissolved	Water	415.1	
MB 680-303261/6	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 303380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95908-1	BSA-MW-2D-1113	Total/NA	Water	310.1	
680-95908-3	CPA-MW-3D-1113	Total/NA	Water	310.1	
LCS 680-303380/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-303380/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-303380/5	Method Blank	Total/NA	Water	310.1	

General Chemistry (Continued)

Analysis Batch: 303829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95908-1	BSA-MW-2D-1113	Total/NA	Water	415.1	
680-95908-1 DU	BSA-MW-2D-1113	Total/NA	Water	415.1	
680-95908-3	CPA-MW-3D-1113	Total/NA	Water	415.1	
LCS 680-303829/29	Lab Control Sample	Total/NA	Water	415.1	
MB 680-303829/26	Method Blank	Total/NA	Water	415.1	

Client Sample ID: BSA-MW-2D-1113 — **Lab Sample ID: 680-95908-1**
Date Collected: 11/06/13 11:55 — **Matrix: Water**
Date Received: 11/07/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2000	303240	11/14/13 18:44	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302484	11/10/13 16:54	AJMC	TAL SAV
Total Recoverable	Prep	3005A			302362	11/08/13 11:32	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	302750	11/11/13 23:57	BCB	TAL SAV
Total/NA	Analysis	353.2		1	302253	11/07/13 17:24	CRW	TAL SAV
Total/NA	Analysis	375.4		1	302385	11/08/13 11:32	JME	TAL SAV
Total/NA	Analysis	325.2		2	303120	11/13/13 15:02	JME	TAL SAV
Total/NA	Analysis	310.1		1	303380	11/14/13 17:51	LBH	TAL SAV
Total/NA	Analysis	415.1		1	303829	11/16/13 20:25	CMP	TAL SAV

Client Sample ID: BSA-MW-2D-F(0.2)-1113 — **Lab Sample ID: 680-95908-2**
Date Collected: 11/06/13 11:55 — **Matrix: Water**
Date Received: 11/07/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302362	11/08/13 11:32	BJB	TAL SAV
Dissolved	Analysis	6010C		1	302750	11/12/13 00:01	BCB	TAL SAV
Dissolved	Analysis	415.1		1	303261	11/13/13 18:45	CMP	TAL SAV

Client Sample ID: CPA-MW-3D-1113 — **Lab Sample ID: 680-95908-3**
Date Collected: 11/06/13 14:20 — **Matrix: Water**
Date Received: 11/07/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		100	302958	11/13/13 20:40	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302485	11/11/13 12:27	TF1	TAL SAV
Total Recoverable	Prep	3005A			302362	11/08/13 11:32	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	302750	11/12/13 00:06	BCB	TAL SAV
Total/NA	Analysis	353.2		1	302253	11/07/13 17:30	CRW	TAL SAV
Total/NA	Analysis	375.4		1	302385	11/08/13 11:32	JME	TAL SAV
Total/NA	Analysis	325.2		5	303120	11/13/13 14:53	JME	TAL SAV
Total/NA	Analysis	310.1		1	303380	11/14/13 18:01	LBH	TAL SAV
Total/NA	Analysis	415.1		1	303829	11/16/13 20:50	CMP	TAL SAV

Client Sample ID: CPA-MW-3D-F(0.2)-1113 — **Lab Sample ID: 680-95908-4**
Date Collected: 11/06/13 14:20 — **Matrix: Water**
Date Received: 11/07/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302362	11/08/13 11:32	BJB	TAL SAV
Dissolved	Analysis	6010C		1	302750	11/12/13 00:20	BCB	TAL SAV

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

Client Sample ID: CPA-MW-3D-F(0.2)-1113 — **Lab Sample ID: 680-95908-4**
Date Collected: 11/06/13 14:20 — Matrix: Water
Date Received: 11/07/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	303261	11/13/13 18:59	CMP	TAL SAV

Client Sample ID: BSA-MW-2D-EB — **Lab Sample ID: 680-95908-5**
Date Collected: 11/06/13 10:45 — Matrix: Water
Date Received: 11/07/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	302958	11/13/13 15:05	JD1	TAL SAV

Client Sample ID: CPA-MW-3D-1113-AD — **Lab Sample ID: 680-95908-6**
Date Collected: 11/06/13 14:20 — Matrix: Water
Date Received: 11/07/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		50	303411	11/15/13 19:48	JD1	TAL SAV

Client Sample ID: 4Q13 LTM Trip Blank # 3 — **Lab Sample ID: 680-95908-7**
Date Collected: 11/06/13 00:00 — Matrix: Water
Date Received: 11/07/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	302958	11/13/13 14:36	JD1	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

DEC 06 2013

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/6/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEX	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) C			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260B	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
BSA-MW-2D-1113	11/6/13	1155	G	Water	12		3	1	1	1	3	2	1			
BSA-MW-2D-F(0.2)-1113		1155	G	Water	2	X								1	1	
CPA-MW-3D-1113		1420	G	Water	12		3	1	1	1	3	2	1			
CPA-MW-3D-F(0.2)-1113		1420	G	Water	2	X								1	1	
~~BSA-MW-3D-1113~~			G	Water	12		3	1	1	1	3	2	1			
~~BSA-MW-3D-F(0.2)-1113~~			G	Water	2	X								1	1	
~~BSA-MW-3D-1113-EB~~ BSA-MW-3D-EB		1045	G	Water	3		3									
CPA-MW-3D-1113-AD		1420	G	Water	3		3									
			G	Water	~~12~~		~~3~~	~~1~~	~~1~~	~~1~~	~~3~~	~~2~~	~~1~~			
			G	Water	2	X								1	1	
4Q13 LTM Trip Blank # 3	11/6/13	—	—	Water	2		2									
							2	4	1	1	1	3,1	2	4	2	

680-95908 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ison B ☐nown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	11/6/13 1515	[signature]	TA-SAV	11/07/13 10:01
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

680-95908 0.6°C

DEC 06 2013

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-95908-1
SDG Number: KPS099

Login Number: 95908
List Number: 1
Creator: Contreras, Cesar A

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	False	Samples 1(B,D), 2(A,B), 3B, 4(A,B) have pH greater than 2
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Certification Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95908-1
SDG: KPS099

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	02-01-14
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-13 *
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13 *
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	06-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13 *
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky	State Program	4	90084	12-31-13 *
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13 *
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-14 *
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13 *
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia	State Program	3	9950C	12-31-13 *
West Virginia DEP	State Program	3	94	06-30-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

* Expired certification is currently pending renewal and is considered valid.

DEC 06 2013

Solutia Krummrich Data Review
WGK LTM 4Q13

Laboratory SDG: KPS100

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 12/9/2013

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund Inorganic Data Review 2010

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009)

Sample Identification	
GWE-5S-1113	GWE-5S-F(0.2)-1113
GWE-5M-1113	GWE-5M-F(0.2)-1113
GWE-5D-1113	GWE-5D-F(0.2)-1113
GWE-3D-1113	GWE-3D-F(0.2)-1113
4Q13 LTM Trip Blank #4	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated samples were diluted due to high levels of target analytes. This issue is addressed further in the appropriate section below.

The cooler receipt form indicated that one of one coolers was received by the laboratory at a temperature of 1.4°C, which is outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore no qualification of data was required.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

Yes

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, although not requested, sample GWE-5S-1113 was analyzed for metals.

Were MS/MSD recoveries within evaluation criteria?

Yes

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

Yes, sample GWE-5D-1113 was duplicated and analyzed for alkalinity.

Were laboratory duplicate sample RPDs within criteria?

Yes

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

11.0 Additional Qualifications

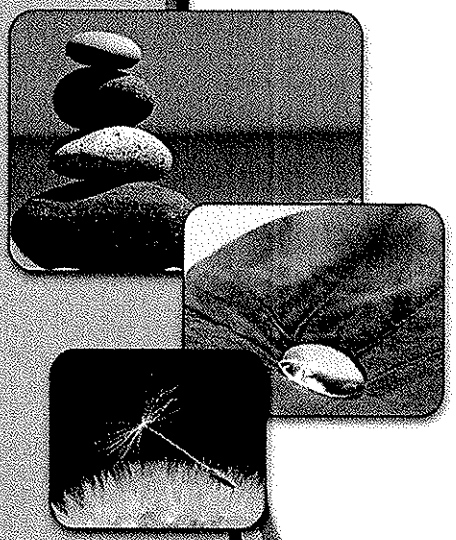
Were additional qualifications applied?

No

SDG KPS100

Results of Samples from Monitoring Well:

GWE-5S
GWE-5M
GWE-5D
GWE-3D



TestAmerica

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-95983-1
TestAmerica Sample Delivery Group: KPS100
Client Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
11/26/2013 2:53:43 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

Reviewed on DEC 09 2013

Table of Contents

DEC 09 2013

Job ID: 680-95983-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 4Q13 NOV 2013

Report Number: 680-95983-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
The samples were received on 11/8/2013 10:01 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 1.4° C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples GWE-5S-1113 (680-95983-1), GWE-5M-1113 (680-95983-3), GWE-5D-1113 (680-95983-5), GWE-3D-1113 (680-95983-7) and 4Q13 LTM Trip Blank #4 (680-95983-9) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/20/2013.

Samples GWE-5D-1113 (680-95983-5)[2X] and GWE-3D-1113 (680-95983-7)[25X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the volatiles analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED GASES
Samples GWE-5S-1113 (680-95983-1), GWE-5M-1113 (680-95983-3), GWE-5D-1113 (680-95983-5) and GWE-3D-1113 (680-95983-7) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 11/11/2013.

No difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

METALS (ICP)
Samples GWE-5S-F(0.2)-1113 (680-95983-2), GWE-5M-F(0.2)-1113 (680-95983-4), GWE-5D-F(0.2)-1113 (680-95983-6) and GWE-3D-F(0.2)-1113 (680-95983-8) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/11/2013 and analyzed on 11/12/2013 and 11/13/2013.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

DEC 09 2013

Job ID: 680-95983-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

METALS (ICP)
Samples GWE-5S-1113 (680-95983-1), GWE-5M-1113 (680-95983-3), GWE-5D-1113 (680-95983-5) and GWE-3D-1113 (680-95983-7) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/11/2013 and analyzed on 11/12/2013 and 11/13/2013.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

ALKALINITY
Samples GWE-5S-1113 (680-95983-1), GWE-5M-1113 (680-95983-3), GWE-5D-1113 (680-95983-5) and GWE-3D-1113 (680-95983-7) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 11/18/2013.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

CHLORIDE
Samples GWE-5S-1113 (680-95983-1), GWE-5M-1113 (680-95983-3), GWE-5D-1113 (680-95983-5) and GWE-3D-1113 (680-95983-7) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 11/13/2013.

Sample GWE-3D-1113 (680-95983-7)[10X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

NITRATE-NITRITE AS NITROGEN
Samples GWE-5S-1113 (680-95983-1), GWE-5M-1113 (680-95983-3), GWE-5D-1113 (680-95983-5) and GWE-3D-1113 (680-95983-7) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 11/08/2013.

No difficulties were encountered during the nitrate-nitrite analysis.

All quality control parameters were within the acceptance limits.

SULFATE
Samples GWE-5S-1113 (680-95983-1), GWE-5M-1113 (680-95983-3), GWE-5D-1113 (680-95983-5) and GWE-3D-1113 (680-95983-7) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 11/11/2013.

Samples GWE-5S-1113 (680-95983-1)[5X], GWE-5M-1113 (680-95983-3)[5X], GWE-5D-1113 (680-95983-5)[20X] and GWE-3D-1113 (680-95983-7)[20X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON
Samples GWE-5S-1113 (680-95983-1), GWE-5M-1113 (680-95983-3), GWE-5D-1113 (680-95983-5) and GWE-3D-1113 (680-95983-7) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 11/16/2013.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

DEC 09 2013

TestAmerica Savannah

Job ID: 680-95983-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

DISSOLVED ORGANIC CARBON (DOC)

Samples GWE-5S-F(0.2)-1113 (680-95983-2), GWE-5M-F(0.2)-1113 (680-95983-4), GWE-5D-F(0.2)-1113 (680-95983-6) and GWE-3D-F(0.2)-1113 (680-95983-8) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 11/13/2013.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

DEC 09 2013

Sample Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-95983-1	GWE-5S-1113	Water	11/07/13 13:40	11/08/13 10:01
680-95983-2	GWE-5S-F(0.2)-1113	Water	11/07/13 13:40	11/08/13 10:01
680-95983-3	GWE-5M-1113	Water	11/07/13 12:00	11/08/13 10:01
680-95983-4	GWE-5M-F(0.2)-1113	Water	11/07/13 12:00	11/08/13 10:01
680-95983-5	GWE-5D-1113	Water	11/07/13 10:45	11/08/13 10:01
680-95983-6	GWE-5D-F(0.2)-1113	Water	11/07/13 10:45	11/08/13 10:01
680-95983-7	GWE-3D-1113	Water	11/07/13 15:30	11/08/13 10:01
680-95983-8	GWE-3D-F(0.2)-1113	Water	11/07/13 15:30	11/08/13 10:01
680-95983-9	4Q13 LTM Trip Blank #4	Water	11/07/13 00:00	11/08/13 10:01

DEC 09 2013

TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

DEC 09 2013

TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

DEC 09 2013

TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Client Sample ID: GWE-5S-1113 — Lab Sample ID: 680-95983-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	7.8		1.0		ug/L	1		8260B	Total/NA
Methane	1.2		0.58		ug/L	1		RSK-175	Total/NA
Manganese	0.24		0.010		mg/L	1		6010C	Total Recoverable
Chloride	34		1.0		mg/L	1		325.2	Total/NA
Nitrate as N	0.37		0.050		mg/L	1		353.2	Total/NA
Sulfate	100		25		mg/L	5		375.4	Total/NA
Total Organic Carbon	4.2		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	440		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	49		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-5S-F(0.2)-1113 — Lab Sample ID: 680-95983-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese, Dissolved	0.24		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.0		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GWE-5M-1113 — Lab Sample ID: 680-95983-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	5.0		1.0		ug/L	1		8260B	Total/NA
Methane	31		0.58		ug/L	1		RSK-175	Total/NA
Iron	22		0.050		mg/L	1		6010C	Total Recoverable
Manganese	1.2		0.010		mg/L	1		6010C	Total Recoverable
Chloride	51		1.0		mg/L	1		325.2	Total/NA
Sulfate	100		25		mg/L	5		375.4	Total/NA
Total Organic Carbon	1.8		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	430		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	40		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-5M-F(0.2)-1113 — Lab Sample ID: 680-95983-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	23		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	1.2		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	1.7		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GWE-5D-1113 — Lab Sample ID: 680-95983-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	9.6		2.0		ug/L	2		8260B	Total/NA
Chlorobenzene	160		2.0		ug/L	2		8260B	Total/NA
1,2-Dichlorobenzene	4.2		2.0		ug/L	2		8260B	Total/NA
1,4-Dichlorobenzene	18		2.0		ug/L	2		8260B	Total/NA
Methane	45		0.58		ug/L	1		RSK-175	Total/NA
Iron	16		0.050		mg/L	1		6010C	Total Recoverable

This Detection Summary does not include radiochemical test results.

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Client Sample ID: GWE-5D-1113 (Continued)

Lab Sample ID: 680-95983-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.43		0.010		mg/L	1		6010C	Total Recoverable
Chloride	94		1.0		mg/L	1		325.2	Total/NA
Sulfate	460		100		mg/L	20		375.4	Total/NA
Total Organic Carbon	2.6		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	330		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	28		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-5D-F(0.2)-1113

Lab Sample ID: 680-95983-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	16		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.42		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	2.5		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: GWE-3D-1113

Lab Sample ID: 680-95983-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	36		25		ug/L	25		8260B	Total/NA
Chlorobenzene	1900		25		ug/L	25		8260B	Total/NA
1,2-Dichlorobenzene	25		25		ug/L	25		8260B	Total/NA
1,4-Dichlorobenzene	160		25		ug/L	25		8260B	Total/NA
Methane	35		0.58		ug/L	1		RSK-175	Total/NA
Iron	26		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.74		0.010		mg/L	1		6010C	Total Recoverable
Chloride	870		10		mg/L	10		325.2	Total/NA
Sulfate	410		100		mg/L	20		375.4	Total/NA
Total Organic Carbon	4.9		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	390		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	43		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: GWE-3D-F(0.2)-1113

Lab Sample ID: 680-95983-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	26		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.76		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	4.8		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: 4Q13 LTM Trip Blank #4

Lab Sample ID: 680-95983-9

No Detections.

This Detection Summary does not include radiochemical test results.

DEC 09 2013

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Client Sample ID: GWE-5S-1113
Date Collected: 11/07/13 13:40
Date Received: 11/08/13 10:01

Lab Sample ID: 680-95983-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**7.8**		1.0		ug/L			11/20/13 03:06	1
Chlorobenzene	1.0	U	1.0		ug/L			11/20/13 03:06	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 03:06	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 03:06	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 03:06	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*70 - 130*		*11/20/13 03:06*	*1*
Dibromofluoromethane	*109*		*70 - 130*		*11/20/13 03:06*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*11/20/13 03:06*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/11/13 11:35	1
Ethylene	1.0	U	1.0		ug/L			11/11/13 11:35	1
Methane	**1.2**		0.58		ug/L			11/11/13 11:35	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		11/11/13 13:32	11/12/13 23:27	1
Manganese	**0.24**		0.010		mg/L		11/11/13 13:32	11/12/13 23:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**34**		1.0		mg/L			11/13/13 14:15	1
Nitrate as N	**0.37**		0.050		mg/L			11/08/13 16:00	1
Sulfate	**100**		25		mg/L			11/11/13 16:27	5
Total Organic Carbon	**4.2**		1.0		mg/L			11/16/13 21:04	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**440**		5.0		mg/L			11/18/13 12:33	1
Carbon Dioxide, Free	**49**		5.0		mg/L			11/18/13 12:33	1

DEC 09 2013

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Client Sample ID: GWE-5S-F(0.2)-1113
Date Collected: 11/07/13 13:40
Date Received: 11/08/13 10:01

Lab Sample ID: 680-95983-2
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	0.050	U	0.050		mg/L		11/11/13 13:32	11/12/13 23:50	1
Manganese, Dissolved	**0.24**		0.010		mg/L		11/11/13 13:32	11/12/13 23:50	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	**4.0**		1.0		mg/L			11/13/13 19:15	1

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Client Sample ID: GWE-5M-1113
Date Collected: 11/07/13 12:00
Date Received: 11/08/13 10:01

Lab Sample ID: 680-95983-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**5.0**		1.0		ug/L			11/20/13 03:35	1
Chlorobenzene	1.0	U	1.0		ug/L			11/20/13 03:35	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 03:35	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 03:35	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 03:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*70 - 130*		*11/20/13 03:35*	*1*
Dibromofluoromethane	*111*		*70 - 130*		*11/20/13 03:35*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*11/20/13 03:35*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/11/13 11:22	1
Ethylene	1.0	U	1.0		ug/L			11/11/13 11:22	1
Methane	**31**		0.58		ug/L			11/11/13 11:22	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**22**		0.050		mg/L		11/11/13 13:32	11/12/13 23:55	1
Manganese	**1.2**		0.010		mg/L		11/11/13 13:32	11/12/13 23:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**51**		1.0		mg/L			11/13/13 14:15	1
Nitrate as N	0.050	U	0.050		mg/L			11/08/13 15:59	1
Sulfate	**100**		25		mg/L			11/11/13 15:50	5
Total Organic Carbon	**1.8**		1.0		mg/L			11/16/13 21:18	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**430**		5.0		mg/L			11/18/13 12:41	1
Carbon Dioxide, Free	**40**		5.0		mg/L			11/18/13 12:41	1

DEC 09 2013

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Client Sample ID: GWE-5M-F(0.2)-1113
Date Collected: 11/07/13 12:00
Date Received: 11/08/13 10:01

Lab Sample ID: 680-95983-4
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	23		0.050		mg/L		11/11/13 13:32	11/13/13 00:09	1
Manganese, Dissolved	1.2		0.010		mg/L		11/11/13 13:32	11/13/13 00:09	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.7		1.0		mg/L			11/13/13 20:05	1

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Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Client Sample ID: GWE-5D-1113
Date Collected: 11/07/13 10:45
Date Received: 11/08/13 10:01

Lab Sample ID: 680-95983-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**9.6**		2.0		ug/L			11/20/13 02:37	2
Chlorobenzene	**160**		2.0		ug/L			11/20/13 02:37	2
1,2-Dichlorobenzene	**4.2**		2.0		ug/L			11/20/13 02:37	2
1,3-Dichlorobenzene	2.0	U	2.0		ug/L			11/20/13 02:37	2
1,4-Dichlorobenzene	**18**		2.0		ug/L			11/20/13 02:37	2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*70 - 130*		*11/20/13 02:37*	*2*
Dibromofluoromethane	*99*		*70 - 130*		*11/20/13 02:37*	*2*
Toluene-d8 (Surr)	*102*		*70 - 130*		*11/20/13 02:37*	*2*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/11/13 11:10	1
Ethylene	1.0	U	1.0		ug/L			11/11/13 11:10	1
Methane	**45**		0.58		ug/L			11/11/13 11:10	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**16**		0.050		mg/L		11/11/13 13:32	11/13/13 00:13	1
Manganese	**0.43**		0.010		mg/L		11/11/13 13:32	11/13/13 00:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**94**		1.0		mg/L			11/13/13 14:15	1
Nitrate as N	0.050	U	0.050		mg/L			11/08/13 15:57	1
Sulfate	**460**		100		mg/L			11/11/13 16:31	20
Total Organic Carbon	**2.6**		1.0		mg/L			11/16/13 21:33	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**330**		5.0		mg/L			11/18/13 12:49	1
Carbon Dioxide, Free	**28**		5.0		mg/L			11/18/13 12:49	1

DEC 09 2013

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Client Sample ID: GWE-5D-F(0.2)-1113
Date Collected: 11/07/13 10:45
Date Received: 11/08/13 10:01

Lab Sample ID: 680-95983-6
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	16		0.050		mg/L		11/11/13 13:32	11/13/13 00:18	1
Manganese, Dissolved	0.42		0.010		mg/L		11/11/13 13:32	11/13/13 00:18	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.5		1.0		mg/L			11/13/13 20:22	1

DEC 09 2013

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Client Sample ID: GWE-3D-1113
Date Collected: 11/07/13 15:30
Date Received: 11/08/13 10:01

Lab Sample ID: 680-95983-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**36**		25		ug/L			11/20/13 02:07	25
Chlorobenzene	**1900**		25		ug/L			11/20/13 02:07	25
1,2-Dichlorobenzene	**25**		25		ug/L			11/20/13 02:07	25
1,3-Dichlorobenzene	25	U	25		ug/L			11/20/13 02:07	25
1,4-Dichlorobenzene	**160**		25		ug/L			11/20/13 02:07	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*70 - 130*		*11/20/13 02:07*	*25*
Dibromofluoromethane	*101*		*70 - 130*		*11/20/13 02:07*	*25*
Toluene-d8 (Surr)	*99*		*70 - 130*		*11/20/13 02:07*	*25*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/11/13 10:57	1
Ethylene	1.0	U	1.0		ug/L			11/11/13 10:57	1
Methane	**35**		0.58		ug/L			11/11/13 10:57	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**26**		0.050		mg/L		11/11/13 13:32	11/13/13 00:22	1
Manganese	**0.74**		0.010		mg/L		11/11/13 13:32	11/13/13 00:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**870**		10		mg/L			11/13/13 15:04	10
Nitrate as N	0.050	U	0.050		mg/L			11/08/13 15:55	1
Sulfate	**410**		100		mg/L			11/11/13 16:31	20
Total Organic Carbon	**4.9**		1.0		mg/L			11/16/13 21:47	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**390**		5.0		mg/L			11/18/13 13:08	1
Carbon Dioxide, Free	**43**		5.0		mg/L			11/18/13 13:08	1

DEC 09 2013

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Client Sample ID: GWE-3D-F(0.2)-1113
Date Collected: 11/07/13 15:30
Date Received: 11/08/13 10:01

Lab Sample ID: 680-95983-8
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	26		0.050		mg/L		11/11/13 13:32	11/13/13 00:27	1
Manganese, Dissolved	0.76		0.010		mg/L		11/11/13 13:32	11/13/13 00:27	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	4.8		1.0		mg/L			11/13/13 20:36	1

DEC 09 2013

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Client Sample ID: 4Q13 LTM Trip Blank #4
Date Collected: 11/07/13 00:00
Date Received: 11/08/13 10:01

Lab Sample ID: 680-95983-9
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/20/13 00:39	1
Chlorobenzene	1.0	U	1.0		ug/L			11/20/13 00:39	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 00:39	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 00:39	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 00:39	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*100*		*70 - 130*		*11/20/13 00:39*	*1*
Dibromofluoromethane	*109*		*70 - 130*		*11/20/13 00:39*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*11/20/13 00:39*	*1*

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Surrogate Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
680-95983-1	GWE-5S-1113	97	109	100
680-95983-3	GWE-5M-1113	97	111	99
680-95983-5	GWE-5D-1113	104	99	102
680-95983-7	GWE-3D-1113	97	101	99
680-95983-9	4Q13 LTM Trip Blank #4	100	109	99
LCS 680-304108/4	Lab Control Sample	96	104	104
LCSD 680-304108/5	Lab Control Sample Dup	101	99	104
MB 680-304108/8	Method Blank	97	109	100

Surrogate Legend

BFB = 4-Bromofluorobenzene

DBFM = Dibromofluoromethane

TOL = Toluene-d8 (Surr)

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Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-304108/8
Matrix: Water
Analysis Batch: 304108

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/20/13 00:09	1
Chlorobenzene	1.0	U	1.0		ug/L			11/20/13 00:09	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 00:09	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 00:09	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 00:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*70 - 130*		*11/20/13 00:09*	*1*
Dibromofluoromethane	*109*		*70 - 130*		*11/20/13 00:09*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*11/20/13 00:09*	*1*

Lab Sample ID: LCS 680-304108/4
Matrix: Water
Analysis Batch: 304108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	53.1		ug/L		106	74 - 123
Chlorobenzene	50.0	51.4		ug/L		103	79 - 120
1,2-Dichlorobenzene	50.0	53.2		ug/L		106	77 - 124
1,3-Dichlorobenzene	50.0	52.1		ug/L		104	79 - 123
1,4-Dichlorobenzene	50.0	51.4		ug/L		103	76 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*96*		*70 - 130*
Dibromofluoromethane	*104*		*70 - 130*
Toluene-d8 (Surr)	*104*		*70 - 130*

Lab Sample ID: LCSD 680-304108/5
Matrix: Water
Analysis Batch: 304108

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	52.0		ug/L		104	74 - 123	2	30
Chlorobenzene	50.0	52.3		ug/L		105	79 - 120	2	30
1,2-Dichlorobenzene	50.0	52.5		ug/L		105	77 - 124	1	30
1,3-Dichlorobenzene	50.0	52.5		ug/L		105	79 - 123	1	30
1,4-Dichlorobenzene	50.0	52.9		ug/L		106	76 - 124	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*70 - 130*
Dibromofluoromethane	*99*		*70 - 130*
Toluene-d8 (Surr)	*104*		*70 - 130*

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Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-302485/3
Matrix: Water
Analysis Batch: 302485

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/11/13 09:53	1
Ethylene	1.0	U	1.0		ug/L			11/11/13 09:53	1
Methane	0.58	U	0.58		ug/L			11/11/13 09:53	1

Lab Sample ID: LCS 680-302485/4
Matrix: Water
Analysis Batch: 302485

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	285		ug/L		99	75 - 125
Ethylene	269	266		ug/L		99	75 - 125
Methane	154	144		ug/L		93	75 - 125

Lab Sample ID: LCSD 680-302485/5
Matrix: Water
Analysis Batch: 302485

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	287		ug/L		99	75 - 125	1	30
Ethylene	269	267		ug/L		99	75 - 125	1	30
Methane	154	145		ug/L		95	75 - 125	1	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-302642/1-A
Matrix: Water
Analysis Batch: 303006

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 302642

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		11/11/13 13:32	11/12/13 23:18	1
Iron, Dissolved	0.050	U	0.050		mg/L		11/11/13 13:32	11/12/13 23:18	1
Manganese	0.010	U	0.010		mg/L		11/11/13 13:32	11/12/13 23:18	1
Manganese, Dissolved	0.010	U	0.010		mg/L		11/11/13 13:32	11/12/13 23:18	1

Lab Sample ID: LCS 680-302642/2-A
Matrix: Water
Analysis Batch: 303006

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 302642

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	5.33		mg/L		107	75 - 125
Iron, Dissolved	5.00	5.33		mg/L		107	75 - 125
Manganese	0.500	0.503		mg/L		101	75 - 125
Manganese, Dissolved	0.500	0.503		mg/L		101	75 - 125

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Method: 6010C - Metals (ICP) (Continued)

Lab Sample ID: 680-95983-1 MS
Matrix: Water
Analysis Batch: 303006

Client Sample ID: GWE-5S-1113
Prep Type: Total Recoverable
Prep Batch: 302642

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	0.050	U	5.00	5.35		mg/L		106	75 - 125
Iron, Dissolved	0.050		5.00	5.35		mg/L		106	75 - 125
Manganese	0.24		0.500	0.749		mg/L		102	75 - 125
Manganese, Dissolved	0.24		0.500	0.749		mg/L		102	75 - 125

Lab Sample ID: 680-95983-1 MSD
Matrix: Water
Analysis Batch: 303006

Client Sample ID: GWE-5S-1113
Prep Type: Total Recoverable
Prep Batch: 302642

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	0.050	U	5.00	5.36		mg/L		106	75 - 125	0	20
Iron, Dissolved	0.050		5.00	5.36		mg/L		106	75 - 125	0	20
Manganese	0.24		0.500	0.755		mg/L		103	75 - 125	1	20
Manganese, Dissolved	0.24		0.500	0.755		mg/L		103	75 - 125	1	20

Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-303855/5
Matrix: Water
Analysis Batch: 303855

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			11/18/13 11:46	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			11/18/13 11:46	1

Lab Sample ID: LCS 680-303855/6
Matrix: Water
Analysis Batch: 303855

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	211		mg/L		84	80 - 120

Lab Sample ID: LCSD 680-303855/32
Matrix: Water
Analysis Batch: 303855

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	225		mg/L		90	80 - 120	7	30

Lab Sample ID: 680-95983-5 DU
Matrix: Water
Analysis Batch: 303855

Client Sample ID: GWE-5D-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Alkalinity	330		319		mg/L		4	30
Carbon Dioxide, Free	28		26.9		mg/L		5	30

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Method: 325.2 - Chloride

Lab Sample ID: MB 680-303120/47
Matrix: Water
Analysis Batch: 303120

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			11/13/13 15:15	1

Lab Sample ID: LCS 680-303120/6
Matrix: Water
Analysis Batch: 303120

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.0		mg/L		100	85 - 115

Lab Sample ID: MB 680-303121/42
Matrix: Water
Analysis Batch: 303121

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			11/13/13 15:15	1

Lab Sample ID: LCS 680-303121/7
Matrix: Water
Analysis Batch: 303121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.1		mg/L		100	85 - 115

Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-302424/13
Matrix: Water
Analysis Batch: 302424

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			11/08/13 15:49	1

Lab Sample ID: LCS 680-302424/14
Matrix: Water
Analysis Batch: 302424

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.497	0.522		mg/L		105	90 - 110
Nitrate Nitrite as N	0.997	1.02		mg/L		103	90 - 110
Nitrite as N	0.500	0.502		mg/L		100	90 - 110

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-302727/19
Matrix: Water
Analysis Batch: 302727

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			11/11/13 16:27	1

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Method: 375.4 - Sulfate (Continued)

Lab Sample ID: LCS 680-302727/18
Matrix: Water
Analysis Batch: 302727

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.1		mg/L		100	75 - 125

Method: 415.1 - DOC

Lab Sample ID: MB 680-303261/6
Matrix: Water
Analysis Batch: 303261

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			11/13/13 14:43	1

Lab Sample ID: LCS 680-303261/5
Matrix: Water
Analysis Batch: 303261

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	17.3		mg/L		86	80 - 120

Method: 415.1 - TOC

Lab Sample ID: MB 680-303829/26
Matrix: Water
Analysis Batch: 303829

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			11/16/13 17:13	1

Lab Sample ID: LCS 680-303829/29
Matrix: Water
Analysis Batch: 303829

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	20.8		mg/L		104	80 - 120

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QC Association Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

GC/MS VOA

Analysis Batch: 304108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95983-1	GWE-5S-1113	Total/NA	Water	8260B	
680-95983-3	GWE-5M-1113	Total/NA	Water	8260B	
680-95983-5	GWE-5D-1113	Total/NA	Water	8260B	
680-95983-7	GWE-3D-1113	Total/NA	Water	8260B	
680-95983-9	4Q13 LTM Trip Blank #4	Total/NA	Water	8260B	
LCS 680-304108/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-304108/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-304108/8	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 302485

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95983-1	GWE-5S-1113	Total/NA	Water	RSK-175	
680-95983-3	GWE-5M-1113	Total/NA	Water	RSK-175	
680-95983-5	GWE-5D-1113	Total/NA	Water	RSK-175	
680-95983-7	GWE-3D-1113	Total/NA	Water	RSK-175	
LCS 680-302485/4	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-302485/5	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-302485/3	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 302642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95983-1	GWE-5S-1113	Total Recoverable	Water	3005A	
680-95983-1 MS	GWE-5S-1113	Total Recoverable	Water	3005A	
680-95983-1 MSD	GWE-5S-1113	Total Recoverable	Water	3005A	
680-95983-2	GWE-5S-F(0.2)-1113	Dissolved	Water	3005A	
680-95983-3	GWE-5M-1113	Total Recoverable	Water	3005A	
680-95983-4	GWE-5M-F(0.2)-1113	Dissolved	Water	3005A	
680-95983-5	GWE-5D-1113	Total Recoverable	Water	3005A	
680-95983-6	GWE-5D-F(0.2)-1113	Dissolved	Water	3005A	
680-95983-7	GWE-3D-1113	Total Recoverable	Water	3005A	
680-95983-8	GWE-3D-F(0.2)-1113	Dissolved	Water	3005A	
LCS 680-302642/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-302642/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 303006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95983-1	GWE-5S-1113	Total Recoverable	Water	6010C	302642
680-95983-1 MS	GWE-5S-1113	Total Recoverable	Water	6010C	302642
680-95983-1 MSD	GWE-5S-1113	Total Recoverable	Water	6010C	302642
680-95983-2	GWE-5S-F(0.2)-1113	Dissolved	Water	6010C	302642
680-95983-3	GWE-5M-1113	Total Recoverable	Water	6010C	302642
680-95983-4	GWE-5M-F(0.2)-1113	Dissolved	Water	6010C	302642
680-95983-5	GWE-5D-1113	Total Recoverable	Water	6010C	302642
680-95983-6	GWE-5D-F(0.2)-1113	Dissolved	Water	6010C	302642
680-95983-7	GWE-3D-1113	Total Recoverable	Water	6010C	302642
680-95983-8	GWE-3D-F(0.2)-1113	Dissolved	Water	6010C	302642

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Metals (Continued)

Analysis Batch: 303006 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 680-302642/2-A	Lab Control Sample	Total Recoverable	Water	6010C	302642
MB 680-302642/1-A	Method Blank	Total Recoverable	Water	6010C	302642

General Chemistry

Analysis Batch: 302424

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95983-1	GWE-5S-1113	Total/NA	Water	353.2	
680-95983-3	GWE-5M-1113	Total/NA	Water	353.2	
680-95983-5	GWE-5D-1113	Total/NA	Water	353.2	
680-95983-7	GWE-3D-1113	Total/NA	Water	353.2	
LCS 680-302424/14	Lab Control Sample	Total/NA	Water	353.2	
MB 680-302424/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 302727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95983-1	GWE-5S-1113	Total/NA	Water	375.4	
680-95983-3	GWE-5M-1113	Total/NA	Water	375.4	
680-95983-5	GWE-5D-1113	Total/NA	Water	375.4	
680-95983-7	GWE-3D-1113	Total/NA	Water	375.4	
LCS 680-302727/18	Lab Control Sample	Total/NA	Water	375.4	
MB 680-302727/19	Method Blank	Total/NA	Water	375.4	

Analysis Batch: 303120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95983-7	GWE-3D-1113	Total/NA	Water	325.2	
LCS 680-303120/6	Lab Control Sample	Total/NA	Water	325.2	
MB 680-303120/47	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 303121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95983-1	GWE-5S-1113	Total/NA	Water	325.2	
680-95983-3	GWE-5M-1113	Total/NA	Water	325.2	
680-95983-5	GWE-5D-1113	Total/NA	Water	325.2	
LCS 680-303121/7	Lab Control Sample	Total/NA	Water	325.2	
MB 680-303121/42	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 303261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95983-2	GWE-5S-F(0.2)-1113	Dissolved	Water	415.1	
680-95983-4	GWE-5M-F(0.2)-1113	Dissolved	Water	415.1	
680-95983-6	GWE-5D-F(0.2)-1113	Dissolved	Water	415.1	
680-95983-8	GWE-3D-F(0.2)-1113	Dissolved	Water	415.1	
LCS 680-303261/5	Lab Control Sample	Dissolved	Water	415.1	
MB 680-303261/6	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 303829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95983-1	GWE-5S-1113	Total/NA	Water	415.1	
680-95983-3	GWE-5M-1113	Total/NA	Water	415.1	

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General Chemistry (Continued)

Analysis Batch: 303829 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95983-5	GWE-5D-1113	Total/NA	Water	415.1	
680-95983-7	GWE-3D-1113	Total/NA	Water	415.1	
LCS 680-303829/29	Lab Control Sample	Total/NA	Water	415.1	
MB 680-303829/26	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 303855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-95983-1	GWE-5S-1113	Total/NA	Water	310.1	
680-95983-3	GWE-5M-1113	Total/NA	Water	310.1	
680-95983-5	GWE-5D-1113	Total/NA	Water	310.1	
680-95983-5 DU	GWE-5D-1113	Total/NA	Water	310.1	
680-95983-7	GWE-3D-1113	Total/NA	Water	310.1	
LCS 680-303855/6	Lab Control Sample	Total/NA	Water	310.1	
LCSD 680-303855/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-303855/5	Method Blank	Total/NA	Water	310.1	

Client Sample ID: GWE-5S-1113 — **Lab Sample ID: 680-95983-1**
Date Collected: 11/07/13 13:40 — **Matrix: Water**
Date Received: 11/08/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	304108	11/20/13 03:06	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302485	11/11/13 11:35	TF1	TAL SAV
Total Recoverable	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	303006	11/12/13 23:27	BCB	TAL SAV
Total/NA	Analysis	353.2		1	302424	11/08/13 16:00	CRW	TAL SAV
Total/NA	Analysis	375.4		5	302727	11/11/13 16:27	JME	TAL SAV
Total/NA	Analysis	325.2		1	303121	11/13/13 14:15	JME	TAL SAV
Total/NA	Analysis	415.1		1	303829	11/16/13 21:04	CMP	TAL SAV
Total/NA	Analysis	310.1		1	303855	11/18/13 12:33	LBH	TAL SAV

Client Sample ID: GWE-5S-F(0.2)-1113 — **Lab Sample ID: 680-95983-2**
Date Collected: 11/07/13 13:40 — **Matrix: Water**
Date Received: 11/08/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Dissolved	Analysis	6010C		1	303006	11/12/13 23:50	BCB	TAL SAV
Dissolved	Analysis	415.1		1	303261	11/13/13 19:15	CMP	TAL SAV

Client Sample ID: GWE-5M-1113 — **Lab Sample ID: 680-95983-3**
Date Collected: 11/07/13 12:00 — **Matrix: Water**
Date Received: 11/08/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	304108	11/20/13 03:35	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302485	11/11/13 11:22	TF1	TAL SAV
Total Recoverable	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	303006	11/12/13 23:55	BCB	TAL SAV
Total/NA	Analysis	353.2		1	302424	11/08/13 15:59	CRW	TAL SAV
Total/NA	Analysis	375.4		5	302727	11/11/13 15:50	JME	TAL SAV
Total/NA	Analysis	325.2		1	303121	11/13/13 14:15	JME	TAL SAV
Total/NA	Analysis	415.1		1	303829	11/16/13 21:18	CMP	TAL SAV
Total/NA	Analysis	310.1		1	303855	11/18/13 12:41	LBH	TAL SAV

Client Sample ID: GWE-5M-F(0.2)-1113 — **Lab Sample ID: 680-95983-4**
Date Collected: 11/07/13 12:00 — **Matrix: Water**
Date Received: 11/08/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Dissolved	Analysis	6010C		1	303006	11/13/13 00:09	BCB	TAL SAV

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Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Client Sample ID: GWE-5M-F(0.2)-1113

Lab Sample ID: 680-95983-4

Date Collected: 11/07/13 12:00
Matrix: Water
Date Received: 11/08/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	303261	11/13/13 20:05	CMP	TAL SAV

Client Sample ID: GWE-5D-1113

Lab Sample ID: 680-95983-5

Date Collected: 11/07/13 10:45
Matrix: Water
Date Received: 11/08/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		2	304108	11/20/13 02:37	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302485	11/11/13 11:10	TF1	TAL SAV
Total Recoverable	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	303006	11/13/13 00:13	BCB	TAL SAV
Total/NA	Analysis	353.2		1	302424	11/08/13 15:57	CRW	TAL SAV
Total/NA	Analysis	375.4		20	302727	11/11/13 16:31	JME	TAL SAV
Total/NA	Analysis	325.2		1	303121	11/13/13 14:15	JME	TAL SAV
Total/NA	Analysis	415.1		1	303829	11/16/13 21:33	CMP	TAL SAV
Total/NA	Analysis	310.1		1	303855	11/18/13 12:49	LBH	TAL SAV

Client Sample ID: GWE-5D-F(0.2)-1113

Lab Sample ID: 680-95983-6

Date Collected: 11/07/13 10:45
Matrix: Water
Date Received: 11/08/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Dissolved	Analysis	6010C		1	303006	11/13/13 00:18	BCB	TAL SAV
Dissolved	Analysis	415.1		1	303261	11/13/13 20:22	CMP	TAL SAV

Client Sample ID: GWE-3D-1113

Lab Sample ID: 680-95983-7

Date Collected: 11/07/13 15:30
Matrix: Water
Date Received: 11/08/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		25	304108	11/20/13 02:07	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302485	11/11/13 10:57	TF1	TAL SAV
Total Recoverable	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	303006	11/13/13 00:22	BCB	TAL SAV
Total/NA	Analysis	353.2		1	302424	11/08/13 15:55	CRW	TAL SAV
Total/NA	Analysis	375.4		20	302727	11/11/13 16:31	JME	TAL SAV
Total/NA	Analysis	325.2		10	303120	11/13/13 15:04	JME	TAL SAV
Total/NA	Analysis	415.1		1	303829	11/16/13 21:47	CMP	TAL SAV
Total/NA	Analysis	310.1		1	303855	11/18/13 13:08	LBH	TAL SAV

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Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Client Sample ID: GWE-3D-F(0.2)-1113

Lab Sample ID: 680-95983-8

Date Collected: 11/07/13 15:30
Matrix: Water
Date Received: 11/08/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Dissolved	Analysis	6010C		1	303006	11/13/13 00:27	BCB	TAL SAV
Dissolved	Analysis	415.1		1	303261	11/13/13 20:36	CMP	TAL SAV

Client Sample ID: 4Q13 LTM Trip Blank #4

Lab Sample ID: 680-95983-9

Date Collected: 11/07/13 00:00
Matrix: Water
Date Received: 11/08/13 10:01

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	304108	11/20/13 00:39	JD1	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

DEC 09 2013

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/8/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) C			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260B	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1
GWE-5S-1113	11/7/13	1340	G	Water	12		3	1	1	1	3	2	1		
GWE-5S-F(0.2)-1113		1340	G	Water	2	X								1	1
GWE-5M-1113		1200	G	Water	12		3	1	1	1	3	2	1		
GWE-5M-F(0.2)-1113		1200	G	Water	2	X								1	1
GWE-5D-1113		1045	G	Water	12		3	1	1	1	3	2	1		
GWE-5D-F(0.2)-1113		1045	G	Water	2	X								1	1
GWE-3D-1113		1530	G	Water	12		3	1	1	1	3	2	1		
GWE-3D-F(0.2)-1113		1530	G	Water	2	X								1	1
4Q13 LTM Trip Blank #4				Water	2		2								
							2	4	1	1	1	3,1	2	4	2

680-95983 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification
☐ *Non-Hazard* ☐ *Flammable* ☐ *Skin Irritant* ☐ *ison B* ☐ *nown*

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ■ *Disposal By Lab* ☐ *Archive For* _____ *Months*

Special Instructions/QC Requirements & Comments:

1.4°C
680-95983

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
[signature]	URS	11/7/13 1620			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by: [signature]	Company: TA SV	Date/Time: 11/08/13 1001

DEC 09 2013

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-95983-1
SDG Number: KPS100

Login Number: 95983
List Number: 1
Creator: Conner, Keaton

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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Certification Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-95983-1
SDG: KPS100

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	02-01-14
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-13 *
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13 *
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	06-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13 *
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky	State Program	4	90084	12-31-13 *
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13 *
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-14 *
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13 *
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia	State Program	3	9950C	12-31-13 *
West Virginia DEP	State Program	3	94	06-30-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

* Expired certification is currently pending renewal and is considered valid.

DEC 09 2013

Solutia Krummrich Data Review
WGK LTM 4Q13

Laboratory SDG: KPS101

Data Reviewer: Melissa Mansker

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 12/9/2013

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008. USEPA National Functional Guidelines for Superfund Inorganic Data Review 2010

Work Plan: Revised Long-Term Monitoring Program (LTMP) Work Plan (Solutia 2009)

Sample Identification	
ESL-MW-A-1113	ESL-MW-A-F(0.2)-1113
ESL-MW-C1-1113	ESL-MW-C1-F(0.2)-1113
ESL-MW-D1-1113	ESL-MW-D1-F(0.2)-1113
4Q13 LTM Trip Blank #5	

1.0 Data Package Completeness

Were all items delivered as specified in the QAPP and COC as appropriate?

Yes

2.0 Laboratory Case Narrative \ Cooler Receipt Form

Were problems noted in the laboratory case narrative or cooler receipt form?

Yes, the laboratory case narrative indicated the VOC LCS recovery was outside evaluation criteria for 1,2-dichlorobenzene. The nitrate MSD recovery was outside evaluation criteria for sample ESL-MW-A-1113. Samples were diluted due to high levels of target analytes. These issues are addressed further in the appropriate sections below.

The cooler receipt form did not indicate any problems.

3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No

5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/ RPD Criteria
LCS/LCSD 680-304581/4/5	VOCs	1,2-Dichlorobenzene	**76/79**	4	77-124/30

Analytical data that required qualification based on LCS data are included in the table below.

Sample ID	Parameter	Analyte	Qualification
ESL-MW-D1-1113	VOCs	1,2-Dichlorobenzene	**UJ**

6.0 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

Yes

7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples collected as part of this SDG?

Yes, although not requested, sample ESL-MW-A-1113 was analyzed for nitrate.

Were MS/MSD recoveries within evaluation criteria?

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
ESL-MW-A-1113	General chemistry	Nitrate	110/**111**	1	90-110/10

Analytical data reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a possible high bias, did not require qualification. No qualification of data was required.

8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

Yes

9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

No

10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

No

10.0 Sample Dilutions

For samples that were diluted and nondetect, were undiluted results also reported?

Not applicable; analytes were detected in samples that were diluted.

11.0 Additional Qualifications

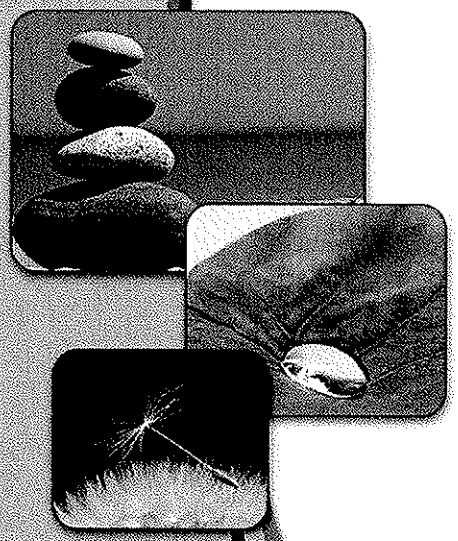
Were additional qualifications applied?

No

SDG KPS101

Results of Samples from Monitoring Well:

ESL-MW-A
ESL-MW-C1
ESL-MW-D1



TestAmerica

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Savannah
5102 LaRoche Avenue
Savannah, GA 31404
Tel: (912)354-7858

TestAmerica Job ID: 680-96022-1
TestAmerica Sample Delivery Group: KPS101
Client Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

For:
Solutia Inc.
575 Maryville Centre Dr.
Saint Louis, Missouri 63141

Attn: Mr. Jerry Rinaldi

Michele R Kersey

Authorized for release by:
11/26/2013 2:58:38 PM

Michele Kersey, Project Manager I
(912)354-7858
michele.kersey@testamericainc.com

Reviewed on DEC 09 2013 MK

Table of Contents

DEC 09 2013

Job ID: 680-96022-1

Laboratory: TestAmerica Savannah

Narrative

CASE NARRATIVE

Client: Solutia Inc.

Project: WGK Long Term Monitoring - 4Q13 NOV 2013

Report Number: 680-96022-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 11/09/2013; the samples arrived in good condition, properly preserved and on ice. The temperature of the coolers at receipt was 3.2 C.

VOLATILE ORGANIC COMPOUNDS (GC-MS)

Samples ESL-MW-A-1113 (680-96022-1), ESL-MW-C1-1113 (680-96022-3), ESL-MW-D1-1113 (680-96022-5) and 4Q13 LTM Trip Blank #5 (680-96022-7) were analyzed for Volatile Organic Compounds (GC-MS) in accordance with EPA SW-846 Method 8260B. The samples were analyzed on 11/20/2013 and 11/22/2013.

A full list spike was utilized for this method. Due to the large number of spiked analytes, there is a high probability that one or more analytes will recover outside acceptance limits. The laboratory's SOP allows for four analytes to recover outside criteria for this method when a full list spike is utilized. The LCS associated with batch 304581 had one analyte outside control limits; therefore, re-analysis was not performed. These results have been reported and qualified.

Sample ESL-MW-D1-1113 (680-96022-5)[25X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No other difficulties were encountered during the volatiles analysis.

All other quality control parameters were within the acceptance limits.

DISSOLVED GASES

Samples ESL-MW-A-1113 (680-96022-1), ESL-MW-C1-1113 (680-96022-3) and ESL-MW-D1-1113 (680-96022-5) were analyzed for dissolved gases in accordance with RSK-175. The samples were analyzed on 11/13/2013.

No difficulties were encountered during the dissolved gases analysis.

All quality control parameters were within the acceptance limits.

METALS (ICP)

Samples ESL-MW-A-F(0.2)-1113 (680-96022-2), ESL-MW-C1-F(0.2)-1113 (680-96022-4) and ESL-MW-D1-F(0.2)-1113 (680-96022-6) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/11/2013 and analyzed on 11/13/2013.

DEC 09 2013

TestAmerica Savannah

Job ID: 680-96022-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

METALS (ICP)

Samples ESL-MW-A-1113 (680-96022-1), ESL-MW-C1-1113 (680-96022-3) and ESL-MW-D1-1113 (680-96022-5) were analyzed for Metals (ICP) in accordance with EPA SW-846 Method 6010C. The samples were prepared on 11/11/2013 and analyzed on 11/13/2013.

No difficulties were encountered during the metals analysis.

All quality control parameters were within the acceptance limits.

ALKALINITY

Samples ESL-MW-A-1113 (680-96022-1), ESL-MW-C1-1113 (680-96022-3) and ESL-MW-D1-1113 (680-96022-5) were analyzed for alkalinity in accordance with EPA Method 310.1. The samples were analyzed on 11/18/2013.

No difficulties were encountered during the alkalinity analysis.

All quality control parameters were within the acceptance limits.

CHLORIDE

Samples ESL-MW-A-1113 (680-96022-1), ESL-MW-C1-1113 (680-96022-3) and ESL-MW-D1-1113 (680-96022-5) were analyzed for Chloride in accordance with EPA Method 325.2. The samples were analyzed on 11/13/2013.

Samples ESL-MW-C1-1113 (680-96022-3)[2X] and ESL-MW-D1-1113 (680-96022-5)[2X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the chloride analysis.

All quality control parameters were within the acceptance limits.

NITRATE-NITRITE AS NITROGEN

Samples ESL-MW-A-1113 (680-96022-1), ESL-MW-C1-1113 (680-96022-3) and ESL-MW-D1-1113 (680-96022-5) were analyzed for nitrate-nitrite as nitrogen in accordance with EPA Method 353.2. The samples were analyzed on 11/09/2013.

The matrix spike duplicate (MSD) recovery for batch 302467 were outside control limits. The associated laboratory control sample (LCS) recovery met acceptance criteria.

No other difficulties were encountered during the nitrate-nitrite analysis.

All other quality control parameters were within the acceptance limits.

SULFATE

Samples ESL-MW-A-1113 (680-96022-1), ESL-MW-C1-1113 (680-96022-3) and ESL-MW-D1-1113 (680-96022-5) were analyzed for sulfate in accordance with EPA Method 375.4. The samples were analyzed on 11/11/2013.

Samples ESL-MW-A-1113 (680-96022-1)[50X], ESL-MW-C1-1113 (680-96022-3)[50X] and ESL-MW-D1-1113 (680-96022-5)[50X] required dilution prior to analysis. The reporting limits have been adjusted accordingly.

No difficulties were encountered during the sulfate analysis.

All quality control parameters were within the acceptance limits.

TOTAL ORGANIC CARBON

DEC 09 2013

TestAmerica Savannah

Job ID: 680-96022-1 (Continued)

Laboratory: TestAmerica Savannah (Continued)

Samples ESL-MW-A-1113 (680-96022-1), ESL-MW-C1-1113 (680-96022-3) and ESL-MW-D1-1113 (680-96022-5) were analyzed for total organic carbon in accordance with EPA Method 415.1. The samples were analyzed on 11/16/2013.

No difficulties were encountered during the TOC analysis.

All quality control parameters were within the acceptance limits.

DISSOLVED ORGANIC CARBON (DOC)

Samples ESL-MW-A-F(0.2)-1113 (680-96022-2), ESL-MW-C1-F(0.2)-1113 (680-96022-4) and ESL-MW-D1-F(0.2)-1113 (680-96022-6) were analyzed for Dissolved Organic Carbon (DOC) in accordance with EPA Method 415.1. The samples were analyzed on 11/13/2013.

No difficulties were encountered during the DOC analysis.

All quality control parameters were within the acceptance limits.

DEC 09 2013

TestAmerica Savannah

Sample Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-96022-1
SDG: KPS101

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
680-96022-1	ESL-MW-A-1113	Water	11/08/13 13:55	11/09/13 08:50
680-96022-2	ESL-MW-A-F(0.2)-1113	Water	11/08/13 13:55	11/09/13 08:50
680-96022-3	ESL-MW-C1-1113	Water	11/08/13 10:25	11/09/13 08:50
680-96022-4	ESL-MW-C1-F(0.2)-1113	Water	11/08/13 10:25	11/09/13 08:50
680-96022-5	ESL-MW-D1-1113	Water	11/08/13 12:10	11/09/13 08:50
680-96022-6	ESL-MW-D1-F(0.2)-1113	Water	11/08/13 12:10	11/09/13 08:50
680-96022-7	4Q13 LTM Trip Blank #5	Water	11/08/13 00:00	11/09/13 08:50

DEC 09 2013

TestAmerica Savannah

Method Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-96022-1
SDG: KPS101

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL SAV
RSK-175	Dissolved Gases (GC)	RSK	TAL SAV
6010C	Metals (ICP)	SW846	TAL SAV
310.1	Alkalinity	MCAWW	TAL SAV
325.2	Chloride	MCAWW	TAL SAV
353.2	Nitrogen, Nitrate-Nitrite	MCAWW	TAL SAV
375.4	Sulfate	MCAWW	TAL SAV
415.1	TOC	MCAWW	TAL SAV
415.1	DOC	MCAWW	TAL SAV

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

RSK = Sample Prep And Calculations For Dissolved Gas Analysis In Water Samples Using A GC Headspace Equilibration Technique, RSKSOP-175, Rev. 0, 8/11/94, USEPA Research Lab

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

DEC 09 2013

TestAmerica Savannah

Definitions/Glossary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-96022-1
SDG: KPS101

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
*	LCS or LCSD exceeds the control limits

GC VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Metals

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

General Chemistry

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
F	MS/MSD Recovery and/or RPD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

DEC 09 2013

TestAmerica Savannah

Detection Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-96022-1
SDG: KPS101

Client Sample ID: ESL-MW-A-1113 — Lab Sample ID: 680-96022-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	8.3		1.0		ug/L	1		8260B	Total/NA
Chlorobenzene	4.2		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	2.6		1.0		ug/L	1		8260B	Total/NA
Methane	4.0		0.58		ug/L	1		RSK-175	Total/NA
Iron	16		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.46		0.010		mg/L	1		6010C	Total Recoverable
Chloride	97		1.0		mg/L	1		325.2	Total/NA
Sulfate	620		250		mg/L	50		375.4	Total/NA
Total Organic Carbon	3.1		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	370		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	32		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: ESL-MW-A-F(0.2)-1113 — Lab Sample ID: 680-96022-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	16		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.47		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	2.9		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: ESL-MW-C1-1113 — Lab Sample ID: 680-96022-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.5		1.0		ug/L	1		8260B	Total/NA
1,4-Dichlorobenzene	1.4		1.0		ug/L	1		8260B	Total/NA
Methane	3.3		0.58		ug/L	1		RSK-175	Total/NA
Iron	13		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.43		0.010		mg/L	1		6010C	Total Recoverable
Chloride	100		2.0		mg/L	2		325.2	Total/NA
Sulfate	760		250		mg/L	50		375.4	Total/NA
Total Organic Carbon	3.4		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	390		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	34		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: ESL-MW-C1-F(0.2)-1113 — Lab Sample ID: 680-96022-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	13		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.44		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.5		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: ESL-MW-D1-1113 — Lab Sample ID: 680-96022-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	45		25		ug/L	25		8260B	Total/NA
Chlorobenzene	1500		25		ug/L	25		8260B	Total/NA

This Detection Summary does not include radiochemical test results.

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TestAmerica Savannah

Client Sample ID: ESL-MW-D1-1113 (Continued)

Lab Sample ID: 680-96022-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,4-Dichlorobenzene	41		25		ug/L	25		8260B	Total/NA
Methane	44		0.58		ug/L	1		RSK-175	Total/NA
Iron	15		0.050		mg/L	1		6010C	Total Recoverable
Manganese	0.40		0.010		mg/L	1		6010C	Total Recoverable
Chloride	120		2.0		mg/L	2		325.2	Total/NA
Sulfate	570		250		mg/L	50		375.4	Total/NA
Total Organic Carbon	3.2		1.0		mg/L	1		415.1	Total/NA

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Alkalinity	360		5.0		mg/L	1		310.1	Total/NA
Carbon Dioxide, Free	36		5.0		mg/L	1		310.1	Total/NA

Client Sample ID: ESL-MW-D1-F(0.2)-1113

Lab Sample ID: 680-96022-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron, Dissolved	15		0.050		mg/L	1		6010C	Dissolved
Manganese, Dissolved	0.41		0.010		mg/L	1		6010C	Dissolved
Dissolved Organic Carbon	3.1		1.0		mg/L	1		415.1	Dissolved

Client Sample ID: 4Q13 LTM Trip Blank #5

Lab Sample ID: 680-96022-7

No Detections.

This Detection Summary does not include radiochemical test results.

DEC 09 2013

Client Sample ID: ESL-MW-A-1113
Date Collected: 11/08/13 13:55
Date Received: 11/09/13 08:50

Lab Sample ID: 680-96022-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**8.3**		1.0		ug/L			11/20/13 04:05	1
Chlorobenzene	**4.2**		1.0		ug/L			11/20/13 04:05	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 04:05	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 04:05	1
1,4-Dichlorobenzene	**2.6**		1.0		ug/L			11/20/13 04:05	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*70 - 130*		*11/20/13 04:05*	*1*
Dibromofluoromethane	*113*		*70 - 130*		*11/20/13 04:05*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*11/20/13 04:05*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/13/13 11:36	1
Ethylene	1.0	U	1.0		ug/L			11/13/13 11:36	1
Methane	**4.0**		0.58		ug/L			11/13/13 11:36	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**16**		0.050		mg/L		11/11/13 13:32	11/13/13 00:41	1
Manganese	**0.46**		0.010		mg/L		11/11/13 13:32	11/13/13 00:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**97**		1.0		mg/L			11/13/13 13:35	1
Nitrate as N	0.050	U	0.050		mg/L			11/09/13 12:59	1
Sulfate	**620**		250		mg/L			11/11/13 16:31	50
Total Organic Carbon	**3.1**		1.0		mg/L			11/16/13 22:05	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**370**		5.0		mg/L			11/18/13 14:18	1
Carbon Dioxide, Free	**32**		5.0		mg/L			11/18/13 14:18	1

DEC 09 2013

Client Sample Results

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-96022-1
SDG: KPS101

Client Sample ID: ESL-MW-A-F(0.2)-1113
Date Collected: 11/08/13 13:55
Date Received: 11/09/13 08:50

Lab Sample ID: 680-96022-2
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	16		0.050		mg/L		11/11/13 13:32	11/13/13 00:45	1
Manganese, Dissolved	0.47		0.010		mg/L		11/11/13 13:32	11/13/13 00:45	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	2.9		1.0		mg/L			11/13/13 20:50	1

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Client Sample ID: ESL-MW-C1-1113
Date Collected: 11/08/13 10:25
Date Received: 11/09/13 08:50

Lab Sample ID: 680-96022-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.5**		1.0		ug/L			11/20/13 04:34	1
Chlorobenzene	1.0	U	1.0		ug/L			11/20/13 04:34	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 04:34	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 04:34	1
1,4-Dichlorobenzene	**1.4**		1.0		ug/L			11/20/13 04:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*98*		*70 - 130*		*11/20/13 04:34*	*1*
Dibromofluoromethane	*108*		*70 - 130*		*11/20/13 04:34*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*11/20/13 04:34*	*1*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/13/13 11:49	1
Ethylene	1.0	U	1.0		ug/L			11/13/13 11:49	1
Methane	**3.3**		0.58		ug/L			11/13/13 11:49	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**13**		0.050		mg/L		11/11/13 13:32	11/13/13 00:50	1
Manganese	**0.43**		0.010		mg/L		11/11/13 13:32	11/13/13 00:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**100**		2.0		mg/L			11/13/13 15:04	2
Nitrate as N	0.050	U	0.050		mg/L			11/09/13 13:03	1
Sulfate	**760**		250		mg/L			11/11/13 16:29	50
Total Organic Carbon	**3.4**		1.0		mg/L			11/16/13 22:21	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**390**		5.0		mg/L			11/18/13 13:17	1
Carbon Dioxide, Free	**34**		5.0		mg/L			11/18/13 13:17	1

DEC 09 2013

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-96022-1
SDG: KPS101

Client Sample ID: ESL-MW-C1-F(0.2)-1113
Date Collected: 11/08/13 10:25
Date Received: 11/09/13 08:50

Lab Sample ID: 680-96022-4
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	13		0.050		mg/L		11/11/13 13:32	11/13/13 01:04	1
Manganese, Dissolved	0.44		0.010		mg/L		11/11/13 13:32	11/13/13 01:04	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.5		1.0		mg/L			11/13/13 21:10	1

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Client Sample ID: ESL-MW-D1-1113
Date Collected: 11/08/13 12:10
Date Received: 11/09/13 08:50

Lab Sample ID: 680-96022-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**45**		25		ug/L			11/22/13 12:36	25
Chlorobenzene	**1500**		25		ug/L			11/22/13 12:36	25
1,2-Dichlorobenzene	25	U* UJ	25		ug/L			11/22/13 12:36	25
1,3-Dichlorobenzene	25	U	25		ug/L			11/22/13 12:36	25
1,4-Dichlorobenzene	**41**		25		ug/L			11/22/13 12:36	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*11/22/13 12:36*	*25*
Dibromofluoromethane	*107*		*70 - 130*		*11/22/13 12:36*	*25*
Toluene-d8 (Surr)	*100*		*70 - 130*		*11/22/13 12:36*	*25*

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/13/13 12:02	1
Ethylene	1.0	U	1.0		ug/L			11/13/13 12:02	1
Methane	**44**		0.58		ug/L			11/13/13 12:02	1

Method: 6010C - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**15**		0.050		mg/L		11/11/13 13:32	11/13/13 01:09	1
Manganese	**0.40**		0.010		mg/L		11/11/13 13:32	11/13/13 01:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**120**		2.0		mg/L			11/13/13 15:04	2
Nitrate as N	0.050	U	0.050		mg/L			11/09/13 13:04	1
Sulfate	**570**		250		mg/L			11/11/13 16:29	50
Total Organic Carbon	**3.2**		1.0		mg/L			11/16/13 22:36	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	**380**		5.0		mg/L			11/18/13 13:24	1
Carbon Dioxide, Free	**36**		5.0		mg/L			11/18/13 13:24	1

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Client Sample ID: ESL-MW-D1-F(0.2)-1113
Date Collected: 11/08/13 12:10
Date Received: 11/09/13 08:50

Lab Sample ID: 680-96022-6
Matrix: Water

Method: 6010C - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron, Dissolved	15		0.050		mg/L		11/11/13 13:32	11/13/13 01:13	1
Manganese, Dissolved	0.41		0.010		mg/L		11/11/13 13:32	11/13/13 01:13	1

General Chemistry - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	3.1		1.0		mg/L			11/13/13 21:29	1

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Client Sample ID: 4Q13 LTM Trip Blank #5
Date Collected: 11/08/13 00:00
Date Received: 11/09/13 08:50

Lab Sample ID: 680-96022-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/20/13 01:08	1
Chlorobenzene	1.0	U	1.0		ug/L			11/20/13 01:08	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 01:08	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 01:08	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 01:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*70 - 130*		*11/20/13 01:08*	*1*
Dibromofluoromethane	*111*		*70 - 130*		*11/20/13 01:08*	*1*
Toluene-d8 (Surr)	*99*		*70 - 130*		*11/20/13 01:08*	*1*

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Surrogate Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-96022-1
SDG: KPS101

Method: 8260B - Volatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		BFB	DBFM	TOL
Lab Sample ID	Client Sample ID	(70-130)	(70-130)	(70-130)
680-96022-1	ESL-MW-A-1113	98	113	99
680-96022-3	ESL-MW-C1-1113	98	108	100
680-96022-5	ESL-MW-D1-1113	99	107	100
680-96022-7	4Q13 LTM Trip Blank #5	97	111	99
LCS 680-304108/4	Lab Control Sample	96	104	104
LCS 680-304581/4	Lab Control Sample	81	106	99
LCSD 680-304108/5	Lab Control Sample Dup	101	99	104
LCSD 680-304581/5	Lab Control Sample Dup	84	109	97
MB 680-304108/8	Method Blank	97	109	100
MB 680-304581/9	Method Blank	99	107	97

Surrogate Legend

BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)

DEC 09 2013

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 680-304108/8
Matrix: Water
Analysis Batch: 304108

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/20/13 00:09	1
Chlorobenzene	1.0	U	1.0		ug/L			11/20/13 00:09	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 00:09	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 00:09	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/20/13 00:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*97*		*70 - 130*		*11/20/13 00:09*	*1*
Dibromofluoromethane	*109*		*70 - 130*		*11/20/13 00:09*	*1*
Toluene-d8 (Surr)	*100*		*70 - 130*		*11/20/13 00:09*	*1*

Lab Sample ID: LCS 680-304108/4
Matrix: Water
Analysis Batch: 304108

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	53.1		ug/L		106	74 - 123
Chlorobenzene	50.0	51.4		ug/L		103	79 - 120
1,2-Dichlorobenzene	50.0	53.2		ug/L		106	77 - 124
1,3-Dichlorobenzene	50.0	52.1		ug/L		104	79 - 123
1,4-Dichlorobenzene	50.0	51.4		ug/L		103	76 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*96*		*70 - 130*
Dibromofluoromethane	*104*		*70 - 130*
Toluene-d8 (Surr)	*104*		*70 - 130*

Lab Sample ID: LCSD 680-304108/5
Matrix: Water
Analysis Batch: 304108

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	52.0		ug/L		104	74 - 123	2	30
Chlorobenzene	50.0	52.3		ug/L		105	79 - 120	2	30
1,2-Dichlorobenzene	50.0	52.5		ug/L		105	77 - 124	1	30
1,3-Dichlorobenzene	50.0	52.5		ug/L		105	79 - 123	1	30
1,4-Dichlorobenzene	50.0	52.9		ug/L		106	76 - 124	3	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*70 - 130*
Dibromofluoromethane	*99*		*70 - 130*
Toluene-d8 (Surr)	*104*		*70 - 130*

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 680-304581/9
Matrix: Water
Analysis Batch: 304581

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1.0	U	1.0		ug/L			11/22/13 12:14	1
Chlorobenzene	1.0	U	1.0		ug/L			11/22/13 12:14	1
1,2-Dichlorobenzene	1.0	U	1.0		ug/L			11/22/13 12:14	1
1,3-Dichlorobenzene	1.0	U	1.0		ug/L			11/22/13 12:14	1
1,4-Dichlorobenzene	1.0	U	1.0		ug/L			11/22/13 12:14	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*99*		*70 - 130*		*11/22/13 12:14*	*1*
Dibromofluoromethane	*107*		*70 - 130*		*11/22/13 12:14*	*1*
Toluene-d8 (Surr)	*97*		*70 - 130*		*11/22/13 12:14*	*1*

Lab Sample ID: LCS 680-304581/4
Matrix: Water
Analysis Batch: 304581

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	47.1		ug/L		94	74 - 123
Chlorobenzene	50.0	51.6		ug/L		103	79 - 120
1,2-Dichlorobenzene	50.0	38.0	*	ug/L		76	77 - 124
1,3-Dichlorobenzene	50.0	40.6		ug/L		81	79 - 123
1,4-Dichlorobenzene	50.0	39.6		ug/L		79	76 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*81*		*70 - 130*
Dibromofluoromethane	*106*		*70 - 130*
Toluene-d8 (Surr)	*99*		*70 - 130*

Lab Sample ID: LCSD 680-304581/5
Matrix: Water
Analysis Batch: 304581

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	46.6		ug/L		93	74 - 123	1	30
Chlorobenzene	50.0	54.4		ug/L		109	79 - 120	5	30
1,2-Dichlorobenzene	50.0	39.6		ug/L		79	77 - 124	4	30
1,3-Dichlorobenzene	50.0	41.3		ug/L		83	79 - 123	2	30
1,4-Dichlorobenzene	50.0	40.6		ug/L		81	76 - 124	2	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*84*		*70 - 130*
Dibromofluoromethane	*109*		*70 - 130*
Toluene-d8 (Surr)	*97*		*70 - 130*

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Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 680-302929/3
Matrix: Water
Analysis Batch: 302929

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethane	1.1	U	1.1		ug/L			11/13/13 09:29	1
Ethylene	1.0	U	1.0		ug/L			11/13/13 09:29	1
Methane	0.58	U	0.58		ug/L			11/13/13 09:29	1

Lab Sample ID: LCS 680-302929/5
Matrix: Water
Analysis Batch: 302929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethane	288	287		ug/L		100	75 - 125
Ethylene	269	268		ug/L		99	75 - 125
Methane	154	145		ug/L		94	75 - 125

Lab Sample ID: LCSD 680-302929/8
Matrix: Water
Analysis Batch: 302929

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethane	288	242		ug/L		84	75 - 125	17	30
Ethylene	269	227		ug/L		84	75 - 125	16	30
Methane	154	123		ug/L		80	75 - 125	16	30

Method: 6010C - Metals (ICP)

Lab Sample ID: MB 680-302642/1-A
Matrix: Water
Analysis Batch: 303006

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 302642

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	0.050	U	0.050		mg/L		11/11/13 13:32	11/12/13 23:18	1
Iron, Dissolved	0.050	U	0.050		mg/L		11/11/13 13:32	11/12/13 23:18	1
Manganese	0.010	U	0.010		mg/L		11/11/13 13:32	11/12/13 23:18	1
Manganese, Dissolved	0.010	U	0.010		mg/L		11/11/13 13:32	11/12/13 23:18	1

Lab Sample ID: LCS 680-302642/2-A
Matrix: Water
Analysis Batch: 303006

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 302642

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Iron	5.00	5.33		mg/L		107	75 - 125
Iron, Dissolved	5.00	5.33		mg/L		107	75 - 125
Manganese	0.500	0.503		mg/L		101	75 - 125
Manganese, Dissolved	0.500	0.503		mg/L		101	75 - 125

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Method: 310.1 - Alkalinity

Lab Sample ID: MB 680-303855/5
Matrix: Water
Analysis Batch: 303855

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Alkalinity	5.0	U	5.0		mg/L			11/18/13 11:46	1
Carbon Dioxide, Free	5.0	U	5.0		mg/L			11/18/13 11:46	1

Lab Sample ID: LCS 680-303855/6
Matrix: Water
Analysis Batch: 303855

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Alkalinity	250	211		mg/L		84	80 - 120

Lab Sample ID: LCSD 680-303855/32
Matrix: Water
Analysis Batch: 303855

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Alkalinity	250	225		mg/L		90	80 - 120	7	30

Method: 325.2 - Chloride

Lab Sample ID: MB 680-303120/47
Matrix: Water
Analysis Batch: 303120

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			11/13/13 15:15	1

Lab Sample ID: LCS 680-303120/6
Matrix: Water
Analysis Batch: 303120

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.0		mg/L		100	85 - 115

Lab Sample ID: MB 680-303121/42
Matrix: Water
Analysis Batch: 303121

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	1.0	U	1.0		mg/L			11/13/13 15:15	1

Lab Sample ID: LCS 680-303121/7
Matrix: Water
Analysis Batch: 303121

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	50.0	50.1		mg/L		100	85 - 115

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Method: 353.2 - Nitrogen, Nitrate-Nitrite

Lab Sample ID: MB 680-302467/13
Matrix: Water
Analysis Batch: 302467

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.050	U	0.050		mg/L			11/09/13 12:57	1

Lab Sample ID: LCS 680-302467/14
Matrix: Water
Analysis Batch: 302467

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.497	0.546		mg/L		110	90 - 110
Nitrate Nitrite as N	0.997	1.05		mg/L		105	90 - 110
Nitrite as N	0.500	0.504		mg/L		101	90 - 110

Lab Sample ID: 680-96022-1 MS
Matrix: Water
Analysis Batch: 302467

Client Sample ID: ESL-MW-A-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.050	U	0.497	0.545		mg/L		110	90 - 110
Nitrate Nitrite as N	0.050		0.997	1.05		mg/L		105	90 - 110
Nitrite as N	0.050		0.500	0.505		mg/L		101	90 - 110

Lab Sample ID: 680-96022-1 MSD
Matrix: Water
Analysis Batch: 302467

Client Sample ID: ESL-MW-A-1113
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	0.050	U	0.497	0.549	F	mg/L		111	90 - 110	1	10
Nitrate Nitrite as N	0.050		0.997	1.06		mg/L		106	90 - 110	1	10
Nitrite as N	0.050		0.500	0.508		mg/L		102	90 - 110	1	10

Method: 375.4 - Sulfate

Lab Sample ID: MB 680-302727/19
Matrix: Water
Analysis Batch: 302727

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	5.0	U	5.0		mg/L			11/11/13 16:27	1

Lab Sample ID: LCS 680-302727/18
Matrix: Water
Analysis Batch: 302727

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	20.0	20.1		mg/L		100	75 - 125

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Method: 415.1 - DOC

Lab Sample ID: MB 680-303261/6
Matrix: Water
Analysis Batch: 303261

Client Sample ID: Method Blank
Prep Type: Dissolved

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dissolved Organic Carbon	1.0	U	1.0		mg/L			11/13/13 14:43	1

Lab Sample ID: LCS 680-303261/5
Matrix: Water
Analysis Batch: 303261

Client Sample ID: Lab Control Sample
Prep Type: Dissolved

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dissolved Organic Carbon	20.0	17.3		mg/L		86	80 - 120

Method: 415.1 - TOC

Lab Sample ID: MB 680-303829/26
Matrix: Water
Analysis Batch: 303829

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.0	U	1.0		mg/L			11/16/13 17:13	1

Lab Sample ID: LCS 680-303829/29
Matrix: Water
Analysis Batch: 303829

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	20.0	20.8		mg/L		104	80 - 120

QC Association Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-96022-1
SDG: KPS101

GC/MS VOA

Analysis Batch: 304108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96022-1	ESL-MW-A-1113	Total/NA	Water	8260B	
680-96022-3	ESL-MW-C1-1113	Total/NA	Water	8260B	
680-96022-7	4Q13 LTM Trip Blank #5	Total/NA	Water	8260B	
LCS 680-304108/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-304108/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-304108/8	Method Blank	Total/NA	Water	8260B	

Analysis Batch: 304581

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96022-5	ESL-MW-D1-1113	Total/NA	Water	8260B	
LCS 680-304581/4	Lab Control Sample	Total/NA	Water	8260B	
LCSD 680-304581/5	Lab Control Sample Dup	Total/NA	Water	8260B	
MB 680-304581/9	Method Blank	Total/NA	Water	8260B	

GC VOA

Analysis Batch: 302929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96022-1	ESL-MW-A-1113	Total/NA	Water	RSK-175	
680-96022-3	ESL-MW-C1-1113	Total/NA	Water	RSK-175	
680-96022-5	ESL-MW-D1-1113	Total/NA	Water	RSK-175	
LCS 680-302929/5	Lab Control Sample	Total/NA	Water	RSK-175	
LCSD 680-302929/8	Lab Control Sample Dup	Total/NA	Water	RSK-175	
MB 680-302929/3	Method Blank	Total/NA	Water	RSK-175	

Metals

Prep Batch: 302642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96022-1	ESL-MW-A-1113	Total Recoverable	Water	3005A	
680-96022-2	ESL-MW-A-F(0.2)-1113	Dissolved	Water	3005A	
680-96022-3	ESL-MW-C1-1113	Total Recoverable	Water	3005A	
680-96022-4	ESL-MW-C1-F(0.2)-1113	Dissolved	Water	3005A	
680-96022-5	ESL-MW-D1-1113	Total Recoverable	Water	3005A	
680-96022-6	ESL-MW-D1-F(0.2)-1113	Dissolved	Water	3005A	
LCS 680-302642/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-302642/1-A	Method Blank	Total Recoverable	Water	3005A	

Analysis Batch: 303006

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96022-1	ESL-MW-A-1113	Total Recoverable	Water	6010C	302642
680-96022-2	ESL-MW-A-F(0.2)-1113	Dissolved	Water	6010C	302642
680-96022-3	ESL-MW-C1-1113	Total Recoverable	Water	6010C	302642
680-96022-4	ESL-MW-C1-F(0.2)-1113	Dissolved	Water	6010C	302642
680-96022-5	ESL-MW-D1-1113	Total Recoverable	Water	6010C	302642
680-96022-6	ESL-MW-D1-F(0.2)-1113	Dissolved	Water	6010C	302642
LCS 680-302642/2-A	Lab Control Sample	Total Recoverable	Water	6010C	302642
MB 680-302642/1-A	Method Blank	Total Recoverable	Water	6010C	302642

General Chemistry

Analysis Batch: 302467

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96022-1	ESL-MW-A-1113	Total/NA	Water	353.2	
680-96022-1 MS	ESL-MW-A-1113	Total/NA	Water	353.2	
680-96022-1 MSD	ESL-MW-A-1113	Total/NA	Water	353.2	
680-96022-3	ESL-MW-C1-1113	Total/NA	Water	353.2	
680-96022-5	ESL-MW-D1-1113	Total/NA	Water	353.2	
LCS 680-302467/14	Lab Control Sample	Total/NA	Water	353.2	
MB 680-302467/13	Method Blank	Total/NA	Water	353.2	

Analysis Batch: 302727

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96022-1	ESL-MW-A-1113	Total/NA	Water	375.4	
680-96022-3	ESL-MW-C1-1113	Total/NA	Water	375.4	
680-96022-5	ESL-MW-D1-1113	Total/NA	Water	375.4	
LCS 680-302727/18	Lab Control Sample	Total/NA	Water	375.4	
MB 680-302727/19	Method Blank	Total/NA	Water	375.4	

Analysis Batch: 303120

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96022-1	ESL-MW-A-1113	Total/NA	Water	325.2	
680-96022-3	ESL-MW-C1-1113	Total/NA	Water	325.2	
LCS 680-303120/6	Lab Control Sample	Total/NA	Water	325.2	
MB 680-303120/47	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 303121

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96022-5	ESL-MW-D1-1113	Total/NA	Water	325.2	
LCS 680-303121/7	Lab Control Sample	Total/NA	Water	325.2	
MB 680-303121/42	Method Blank	Total/NA	Water	325.2	

Analysis Batch: 303261

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96022-2	ESL-MW-A-F(0.2)-1113	Dissolved	Water	415.1	
680-96022-4	ESL-MW-C1-F(0.2)-1113	Dissolved	Water	415.1	
680-96022-6	ESL-MW-D1-F(0.2)-1113	Dissolved	Water	415.1	
LCS 680-303261/5	Lab Control Sample	Dissolved	Water	415.1	
MB 680-303261/6	Method Blank	Dissolved	Water	415.1	

Analysis Batch: 303829

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96022-1	ESL-MW-A-1113	Total/NA	Water	415.1	
680-96022-3	ESL-MW-C1-1113	Total/NA	Water	415.1	
680-96022-5	ESL-MW-D1-1113	Total/NA	Water	415.1	
LCS 680-303829/29	Lab Control Sample	Total/NA	Water	415.1	
MB 680-303829/26	Method Blank	Total/NA	Water	415.1	

Analysis Batch: 303855

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
680-96022-1	ESL-MW-A-1113	Total/NA	Water	310.1	
680-96022-3	ESL-MW-C1-1113	Total/NA	Water	310.1	
680-96022-5	ESL-MW-D1-1113	Total/NA	Water	310.1	
LCS 680-303855/6	Lab Control Sample	Total/NA	Water	310.1	

General Chemistry (Continued)

Analysis Batch: 303855 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 680-303855/32	Lab Control Sample Dup	Total/NA	Water	310.1	
MB 680-303855/5	Method Blank	Total/NA	Water	310.1	

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Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-96022-1
SDG: KPS101

Client Sample ID: ESL-MW-A-1113

Lab Sample ID: 680-96022-1
Matrix: Water
Date Collected: 11/08/13 13:55
Date Received: 11/09/13 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	304108	11/20/13 04:05	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302929	11/13/13 11:36	AJMC	TAL SAV
Total Recoverable	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	303006	11/13/13 00:41	BCB	TAL SAV
Total/NA	Analysis	353.2		1	302467	11/09/13 12:59	CRW	TAL SAV
Total/NA	Analysis	375.4		50	302727	11/11/13 16:31	JME	TAL SAV
Total/NA	Analysis	325.2		1	303120	11/13/13 13:35	JME	TAL SAV
Total/NA	Analysis	415.1		1	303829	11/16/13 22:05	CMP	TAL SAV
Total/NA	Analysis	310.1		1	303855	11/18/13 14:18	LBH	TAL SAV

Client Sample ID: ESL-MW-A-F(0.2)-1113

Lab Sample ID: 680-96022-2
Matrix: Water
Date Collected: 11/08/13 13:55
Date Received: 11/09/13 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Dissolved	Analysis	6010C		1	303006	11/13/13 00:45	BCB	TAL SAV
Dissolved	Analysis	415.1		1	303261	11/13/13 20:50	CMP	TAL SAV

Client Sample ID: ESL-MW-C1-1113

Lab Sample ID: 680-96022-3
Matrix: Water
Date Collected: 11/08/13 10:25
Date Received: 11/09/13 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	304108	11/20/13 04:34	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302929	11/13/13 11:49	AJMC	TAL SAV
Total Recoverable	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	303006	11/13/13 00:50	BCB	TAL SAV
Total/NA	Analysis	353.2		1	302467	11/09/13 13:03	CRW	TAL SAV
Total/NA	Analysis	375.4		50	302727	11/11/13 16:29	JME	TAL SAV
Total/NA	Analysis	325.2		2	303120	11/13/13 15:04	JME	TAL SAV
Total/NA	Analysis	415.1		1	303829	11/16/13 22:21	CMP	TAL SAV
Total/NA	Analysis	310.1		1	303855	11/18/13 13:17	LBH	TAL SAV

Client Sample ID: ESL-MW-C1-F(0.2)-1113

Lab Sample ID: 680-96022-4
Matrix: Water
Date Collected: 11/08/13 10:25
Date Received: 11/09/13 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Dissolved	Analysis	6010C		1	303006	11/13/13 01:04	BCB	TAL SAV

DEC 09 2013

Lab Chronicle

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-96022-1
SDG: KPS101

Client Sample ID: ESL-MW-C1-F(0.2)-1113

Lab Sample ID: 680-96022-4

Date Collected: 11/08/13 10:25
Matrix: Water
Date Received: 11/09/13 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Analysis	415.1		1	303261	11/13/13 21:10	CMP	TAL SAV

Client Sample ID: ESL-MW-D1-1113

Lab Sample ID: 680-96022-5

Date Collected: 11/08/13 12:10
Matrix: Water
Date Received: 11/09/13 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		25	304581	11/22/13 12:36	JD1	TAL SAV
Total/NA	Analysis	RSK-175		1	302929	11/13/13 12:02	AJMC	TAL SAV
Total Recoverable	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Total Recoverable	Analysis	6010C		1	303006	11/13/13 01:09	BCB	TAL SAV
Total/NA	Analysis	353.2		1	302467	11/09/13 13:04	CRW	TAL SAV
Total/NA	Analysis	375.4		50	302727	11/11/13 16:29	JME	TAL SAV
Total/NA	Analysis	325.2		2	303121	11/13/13 15:04	JME	TAL SAV
Total/NA	Analysis	415.1		1	303829	11/16/13 22:36	CMP	TAL SAV
Total/NA	Analysis	310.1		1	303855	11/18/13 13:24	LBH	TAL SAV

Client Sample ID: ESL-MW-D1-F(0.2)-1113

Lab Sample ID: 680-96022-6

Date Collected: 11/08/13 12:10
Matrix: Water
Date Received: 11/09/13 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			302642	11/11/13 13:32	BJB	TAL SAV
Dissolved	Analysis	6010C		1	303006	11/13/13 01:13	BCB	TAL SAV
Dissolved	Analysis	415.1		1	303261	11/13/13 21:29	CMP	TAL SAV

Client Sample ID: 4Q13 LTM Trip Blank #5

Lab Sample ID: 680-96022-7

Date Collected: 11/08/13 00:00
Matrix: Water
Date Received: 11/09/13 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	304108	11/20/13 01:08	JD1	TAL SAV

Laboratory References:

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

DEC 09 2013

Savannah
5102 LaRoche Avenue

Savannah, GA 31404
phone 912.354.7858 fax 912.352.0165

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bob Billman	Site Contact: Michael Corbett	Date: 11/8/13	COC No:
URS Corporation	Tel/Fax: (314) 743-4108	Lab Contact: Michele Kersey	Carrier: FedEx	1 of 1 COCs
1001 Highlands Plaza Drive West, Suite 300	Analysis Turnaround Time			Job No.
St. Louis, MO 63110	Calendar (C) or Work Days (W) C			
(314) 429-0100 Phone	TAT if different from Below Standard			SDG No.
(314) 429-0462 FAX	☐ 2 weeks			
Project Name: 4Q13 LTM GW Sampling	☐ 1 week			
Site: Solutia WG Krummrich Facility	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample	VOCs by 8260B	Total Fe/Mn by 6010C	Alk/CO2 by 310.1	Chloride by 325.2/Sulfate by 375.4	Dissolved Gases by RSK 175	Nitrate by 353.2	TOC by 415.1	Dissolved Fe/Mn by 6010C	DOC by 415.1	Sample Specific Notes:
ESL-MW-A-1113	11/8/13	1355	G	Water	12		3	1	1	1	3	2	1			
ESL-MW-A-F(0.2)-1113		1355	G	Water	2	X								1	1	
ESL-MW-C1-1113		1025	G	Water	12		3	1	1	1	3	2	1			
ESL-MW-C1-F(0.2)-1113		1025	G	Water	2	X								1	1	
ESL-MW-D1-1113		1210	G	Water	12		3	1	1	1	3	2	1			
ESL-MW-D1-F(0.2)-1113		1210	G	Water	2	X								1	1	
			G	Water	12		3	1	1	1	3	2	1			
			G	Water	2	X								1	1	
4Q13 LTM Trip Blank # 5				Water	2		2									
							2	4	1	1	1	3,1	2	4	2	

680-96022 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ ison B ☐ known

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ■ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Daniele Natiss	URS	11/8/13/1555		TA-SAV	11/09/13 08:50
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

3.2°C

680-96022

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DEC 09 2013

Login Sample Receipt Checklist

Client: Solutia Inc.

Job Number: 680-96022-1
SDG Number: KPS101

Login Number: 96022
List Number: 1
Creator: Contreras, Cesar A

List Source: TestAmerica Savannah

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

DEC 09 2013

Certification Summary

Client: Solutia Inc.
Project/Site: WGK Long Term Monitoring - 4Q13 NOV 2013

TestAmerica Job ID: 680-96022-1
SDG: KPS101

Laboratory: TestAmerica Savannah

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
	AFCEE		SAVLAB	
A2LA	DoD ELAP		399.01	02-28-15
A2LA	ISO/IEC 17025		399.01	02-28-15
Alabama	State Program	4	41450	06-30-14
Arkansas DEQ	State Program	6	88-0692	02-01-14
California	NELAP	9	3217CA	07-31-14
Colorado	State Program	8	N/A	12-31-13 *
Connecticut	State Program	1	PH-0161	03-31-15
Florida	NELAP	4	E87052	06-30-14
GA Dept. of Agriculture	State Program	4	N/A	12-31-13 *
Georgia	State Program	4	N/A	06-30-14
Georgia	State Program	4	803	06-30-14
Guam	State Program	9	09-005r	06-17-14
Hawaii	State Program	9	N/A	06-30-14
Illinois	NELAP	5	200022	11-30-13 *
Indiana	State Program	5	N/A	06-30-14
Iowa	State Program	7	353	07-01-15
Kentucky	State Program	4	90084	12-31-13 *
Kentucky (UST)	State Program	4	18	06-30-14
Louisiana	NELAP	6	30690	06-30-14
Maine	State Program	1	GA00006	08-16-14
Maryland	State Program	3	250	12-31-13 *
Massachusetts	State Program	1	M-GA006	06-30-14
Michigan	State Program	5	9925	06-30-14
Mississippi	State Program	4	N/A	06-30-14
Montana	State Program	8	CERT0081	01-01-14 *
Nebraska	State Program	7	TestAmerica-Savannah	06-30-14
New Jersey	NELAP	2	GA769	06-30-14
New Mexico	State Program	6	N/A	06-30-14
New York	NELAP	2	10842	04-01-14
North Carolina DENR	State Program	4	269	12-31-13 *
North Carolina DHHS	State Program	4	13701	07-31-14
Oklahoma	State Program	6	9984	08-31-14
Pennsylvania	NELAP	3	68-00474	06-30-14
Puerto Rico	State Program	2	GA00006	01-01-14 *
South Carolina	State Program	4	98001	06-30-14
Tennessee	State Program	4	TN02961	06-30-14
Texas	NELAP	6	T104704185-08-TX	11-30-14
USDA	Federal		SAV 3-04	04-07-14
Virginia	NELAP	3	460161	06-14-14
Washington	State Program	10	C1794	06-10-14
West Virginia	State Program	3	9950C	12-31-13 *
West Virginia DEP	State Program	3	94	06-30-14
Wisconsin	State Program	5	999819810	08-31-14
Wyoming	State Program	8	8TMS-L	06-30-14

* Expired certification is currently pending renewal and is considered valid.

DEC 09 2013

Appendix E

Microbial Insights Data Package

10515 Research Drive
Knoxville, TN 37932
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Fax: (865) 573-8133
Email: info@microbe.com

Client: Nathan McNurlen
URS Corp
1001 Highlands Plaza Dr. West
Suite 300
St. Louis, MO 63110

Phone:

Fax:

Identifier: 096KJ **Date Rec:** 10/31/2013 **Report Date:** 12/12/2013

Client Project #: 21562838.0009 **Client Project Name:** Solutia WGK 4Q13 GW

Purchase Order #: 294668

Analysis Requested: PLFA, Stable Isotope Probing, Standard Bio-Trap

Reviewed By:

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **URS Corp**
Project: Solutia WGK 4Q13 GW

MI Project Number: **096KJ**
Date Received: 10/31/2013

Sample Information

Sample Name:	**BSA-MW-1S-1113**	**BSA-MW2D-1113**	**BSA-MW-3D-1113**	**BSA-MW-4D-1113**	**BSA-MW-5D-1113**
Sample Date:	10/30/2013	10/30/2013	10/30/2013	10/30/2013	10/30/2013
Sample Matrix:	Std. Bio-Trap	Adv. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap
Analyst:	BJ	BJ	BJ	BJ	BJ
Biomass Concentrations					
Total Biomass (cells/bead)	**9.71E+04**	**9.00E+04**	**0.00E+00**	**0.00E+00**	**1.10E+05**
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	**1.27**	**0.00**	**0.00**	**0.00**	**0.00**
Proteobacteria (Monos)	**73.58**	**81.22**	**0.00**	**0.00**	**83.95**
Anaerobic metal reducers (BrMonos)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
SRB/Actinomycetes (MidBrSats)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
General (Nsats)	**25.16**	**18.79**	**0.00**	**0.00**	**14.77**
Eukaryotes (polyenoics)	**0.00**	**0.00**	**0.00**	**0.00**	**1.27**
Physiological Status (Proteobacteria only)					
Slowed Growth	**1.34**	**0.21**	**0.00**	**0.00**	**0.15**
Decreased Permeability	**1.94**	**0.00**	**0.00**	**0.00**	**0.00**

Legend:
NA = Not Analyzed NS = Not Sampled

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
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PLFA

Client: **URS Corp**
Project: Solutia WGK 4Q13 GW

MI Project Number: **096KJ**
Date Received: 10/31/2013

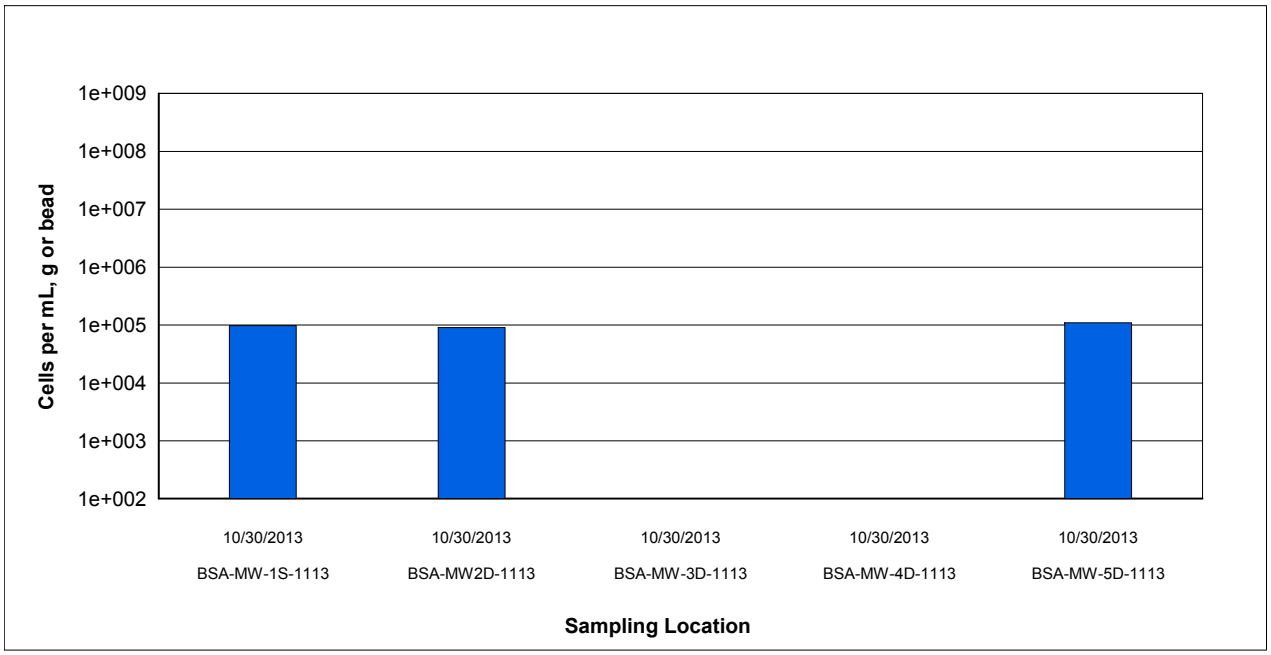

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

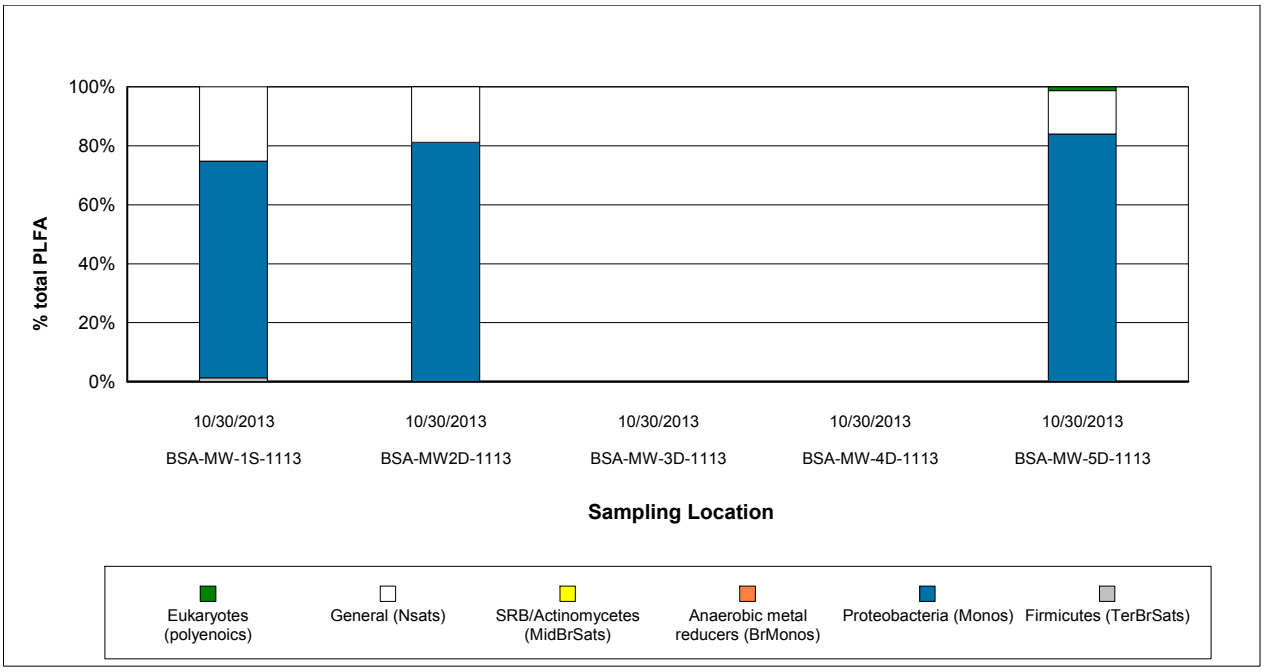

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

MICROBIAL INSIGHTS, INC.

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PLFA

Client: **URS Corp**
Project: Solutia WGK 4Q13 GW

MI Project Number: **096KJ**
Date Received: 10/31/2013

Sample Information

Sample Name:	**CPA-MW-1D-1113**	**CPA-MW-2D-1113**	**CPA-MW3D-1113**	**CPA-MW-4D-1113**	**CPA-MW-5D-1113**
Sample Date:	10/30/2013	10/30/2013	10/30/2013	10/30/2013	10/30/2013
Sample Matrix:	Std. Bio-Trap	Std. Bio-Trap	Adv. Bio-Trap	Std. Bio-Trap	Std. Bio-Trap
Analyst:	BJ	BJ	BJ	BJ	BJ
Biomass Concentrations					
Total Biomass (cells/bead)	**1.22E+05**	**5.56E+04**	**5.60E+04**	**0.00E+00**	**0.00E+00**
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	**1.82**	**0.00**	**0.00**	**0.00**	**0.00**
Proteobacteria (Monos)	**37.45**	**64.51**	**70.38**	**0.00**	**0.00**
Anaerobic metal reducers (BrMonos)	**0.00**	**5.71**	**0.00**	**0.00**	**0.00**
SRB/Actinomycetes (MidBrSats)	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
General (Nsats)	**56.70**	**28.25**	**29.61**	**0.00**	**0.00**
Eukaryotes (polyenoics)	**4.03**	**1.53**	**0.00**	**0.00**	**0.00**
Physiological Status (Proteobacteria only)					
Slowed Growth	**2.21**	**1.79**	**0.43**	**0.00**	**0.00**
Decreased Permeability	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Legend:
NA = Not Analyzed NS = Not Sampled

MICROBIAL INSIGHTS, INC.

10515 Research Dr., Knoxville, TN 37932
Tel. (865) 573-8188 Fax. (865) 573-8133

PLFA

Client: **URS Corp**
Project: Solutia WGK 4Q13 GW

MI Project Number: **096KJ**
Date Received: 10/31/2013

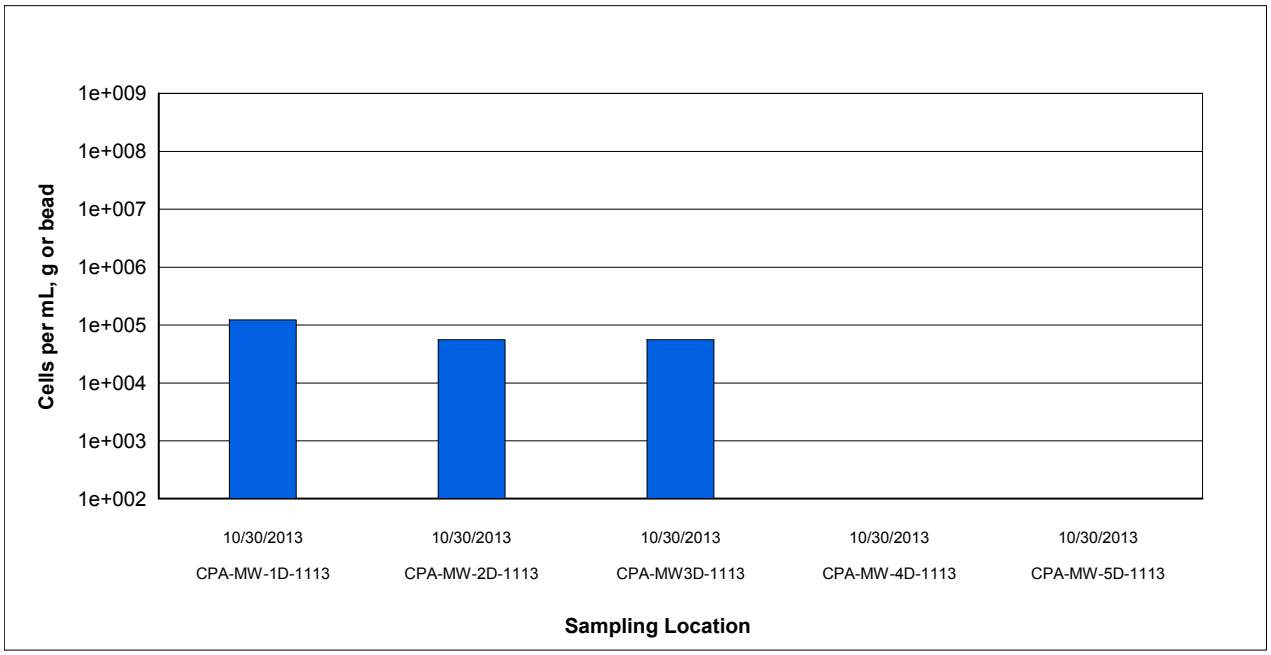

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass

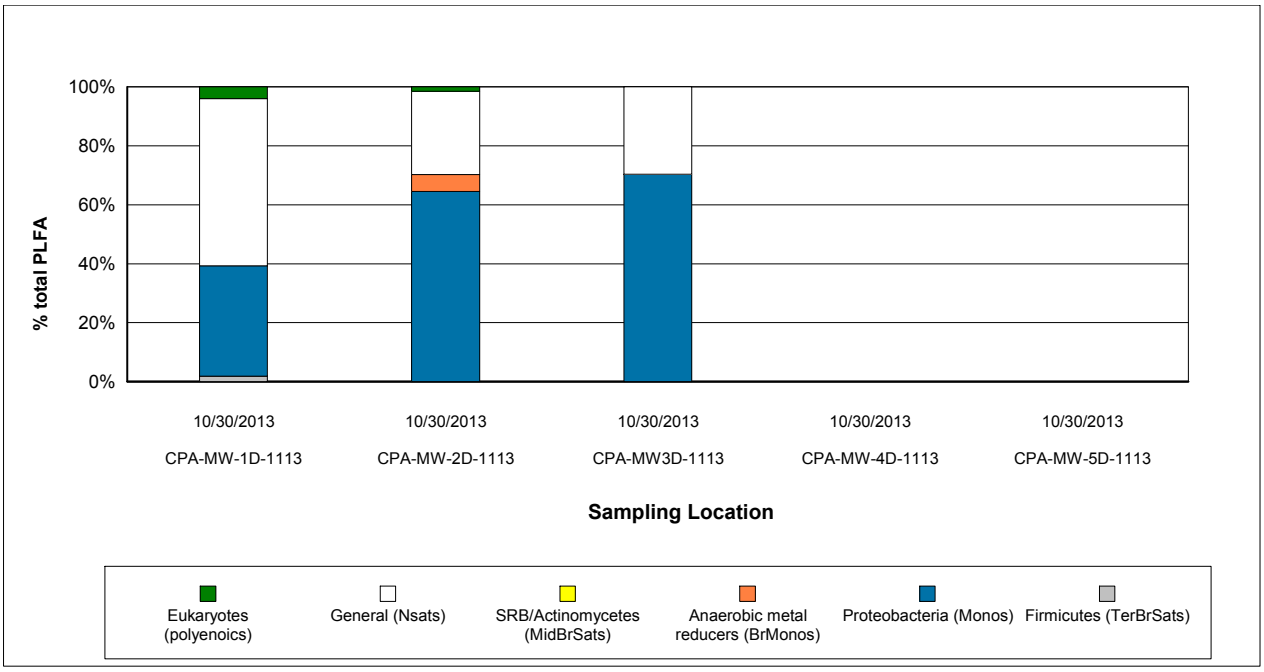

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis.

10515 Research Drive
Knoxville, TN 37932
Phone: (865) 573-8188
Fax: (865) 573-8133
Email: info@microbe.com

Identifier: 096KJ **Date Rec:** 10/31/2013 **Report Date:** 12/12/2013

Client Project #: 21562838.0009 **Client Project Name:** Solutia WGK 4Q13 GW

Purchase Order #: 294668

Comments: Please note that the total biomass result for samples BSA-MW-3D, BSA-MW-4D, CPA-MW-4D, and CPA-MW-5D fell below the method detection limit for the PLFA analysis.

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Web: www.microbe.com

SITE LOGIC Report

Stable Isotope Probing (SIP) Study

Contact: Nathan McNurlen
Phone: (314) 429-0100
Address: URS Corporation – St. Louis MO
1001 Highlands Plaza Drive West
Suite 300
St. Louis, MO 63110
Email: nathan.mcnurlen@urs.com

MI Identifier: 096KJ

Report Date: 12/12/2013

Project: Solutia WGK 4Q13 GW; # 21562838.0009

Comments:

Executive Summary

A Stable Isotope Probing (SIP) study was performed to determine whether biodegradation of benzene and chlorobenzene is occurring under existing site conditions. Bio-Trap® samplers baited with ^{13}C labeled benzene and ^{13}C labeled chlorobenzene were deployed in monitoring wells BSA-MW-2D-1113 and CPA-MW-3D-1113, respectively. Following a deployment period, the Bio-Traps were recovered to quantify ^{13}C incorporation into biomass and dissolved inorganic carbon (DIC). A complete summary of the SIP results is provided in Table 1. Tables 2 and 3 contain summaries of PLFA analysis performed on standard Bio-Trap samplers deployed in select monitoring wells.

Stable Isotope Probing (SIP)

- Incorporation of ^{13}C into the biomass in wells BSA-MW-2D-1113 and CPA-MW-3D-1113 conclusively demonstrates that benzene and chlorobenzene biodegradation occurred under existing site conditions.
    - Total PLFA biomass concentrations in both wells (9.00E+04 and 5.60E+04, respectively) were within the low range.
    - The average PLFA $\delta^{13}C$ values of wells BSA-MW-2D-1113 and CPA-MW-3D-1113 were 1,730‰ and 1,362‰, respectively.
    - Average DIC $\delta^{13}C$ value (25.8‰) in well BSA-MW-2D conclusively shows that mineralization occurred in this well.
    - However, average DIC $\delta^{13}C$ value (-7.3‰) in well CPA-MW-3D indicates mineralization did not occur, at least during the deployment period.
    - The PLFA community structure in both wells was mostly comprised of monounsaturates, indicators of Proteobacteria. Normal saturates were also detected.

PLFA Analysis - Standard Bio-Traps

- Total biomass concentrations in the BSA wells fell within the low to moderate range (~10^4 to ~10^5 cells/bead). Total biomass in wells BSA-MW-3D and BSA-MW-4D fell below the method detection limit for the PLFA analysis.
    - Monounsaturates were the primary PLFA group in the BSA wells suggesting that microbial communities in these wells were mostly Proteobacteria.
- In the CPA wells total PLFA biomass concentrations also fell within the lower range (~10^4 cells/bead). Total biomass in wells CPA-MW-4D, and CPA-MW-5D fell below the method detection limit for the PLFA analysis.
    - As seen in the BSA wells, monounsaturates were the primary PLFA group in all CPA wells.

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Overview of Approach

Stable Isotope Probing (SIP)

Stable isotope probing (SIP) is an innovative method to track the environmental fate of a "labeled" contaminant of concern to unambiguously demonstrate biodegradation. Two stable carbon isotopes exist in nature – carbon 12 (^{12}C) which accounts for 99% of carbon and carbon 13 (^{13}C) which is considerably less abundant (~1%). With the SIP method, the Bio-Trap® sampler is baited with a specially synthesized form of the contaminant containing ^{13}C labeled carbon. Since ^{13}C is rare, the labeled compound can be readily differentiated from the contaminants present at the site. Following deployment, the Bio-Trap® is recovered and three approaches are used to conclusively demonstrate biodegradation of the contaminant of concern.

- The loss of the labeled compound provides an estimate of the degradation rate (% loss of ^{13}C).
- Quantification of ^{13}C enriched phospholipid fatty acids (PLFA) indicates incorporation into microbial biomass.
- Quantification of ^{13}C enriched dissolved inorganic carbon (DIC) indicates contaminant mineralization.

Phospholipid Fatty Acids (PLFA)

PLFA are a primary component of the membrane of all living cells including bacteria. PLFA decomposes rapidly upon cell death (1, 2), so the total amount of PLFA present in a sample is indicative of the viable biomass. When combined with stable isotope probing (SIP), incorporation of ^{13}C into PLFA is a conclusive indicator of biodegradation.

Some organisms produce "signature" types of PLFA allowing quantification of important microbial functional groups (e.g. iron reducers, sulfate reducers, or fermenters). The relative proportions of the groups of PLFA provide a "fingerprint" of the microbial community. In addition, *Proteobacteria* modify specific PLFA during periods of slow growth or in response to environmental stress providing an index of their health and metabolic activity.

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Results

Table 1. Summary of the results obtained from the Bio-Trap® Units. Interpretation guidelines and definitions are found later in the document.

Sample Name	BSA-MW-2D-1113	CPA-MW-3D-1113
^{13}C Contaminant Loss		
^{13}C Benzene Pre-deployment (µg/bead)	102 ± 11	-----
^{13}C Benzene Post-deployment (µg/bead)	82 ± 12	-----
^{13}C Chlorobenzene Pre-deployment (µg/bead)	-----	126 ± 11
^{13}C Chlorobenzene Post-deployment (µg/bead)	-----	51 ± 8
Biomass & ^{13}C Incorporation		
Total Biomass (Cells/bead)	9.00E+04	5.60E+04
^{13}C Enriched Biomass (Cells/bead)	2.45E+03	9.95E+02
Average PLFA Del (‰)	1,730	1,362
Maximum PLFA Del (‰)	2,085	1,849
^{13}C Mineralization		
DIC Del (‰)	25.8	-7.3
% 13C	1.13	1.10
Community Structure (% total PLFA)		
Firmicutes (TerBrSats)	0.0	0.0
Proteobacteria (Monos)	81.2	70.4
Anaerobic metal reducers (BrMonos)	0.0	0.0
Actinomycetes (MidBrSats)	0	0
General (Nsats)	18.8	29.6
Eukaryotes (Polyenoics)	0.0	0.0
Physiological Status (Proteobacteria only)		
Slowed Growth	0.21	0.43
Decreased Permeability	0.00	0.00

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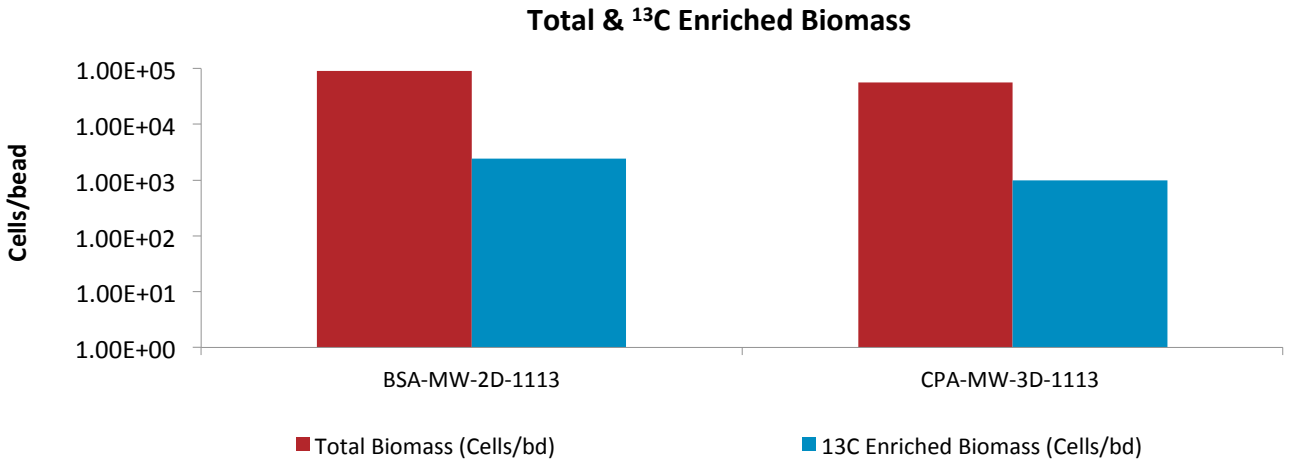

Figure 1. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

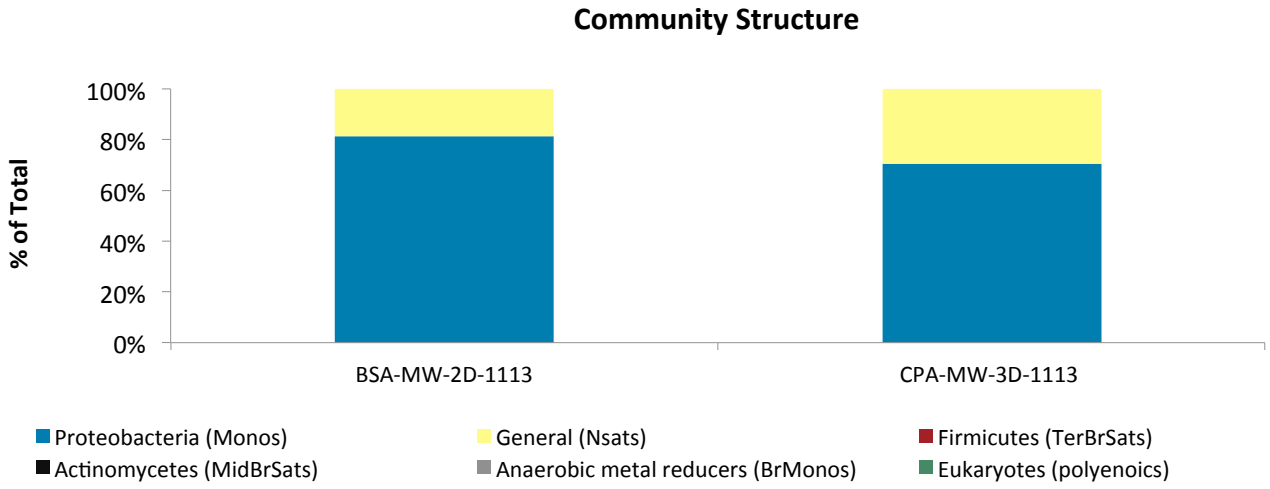

Figure 2. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

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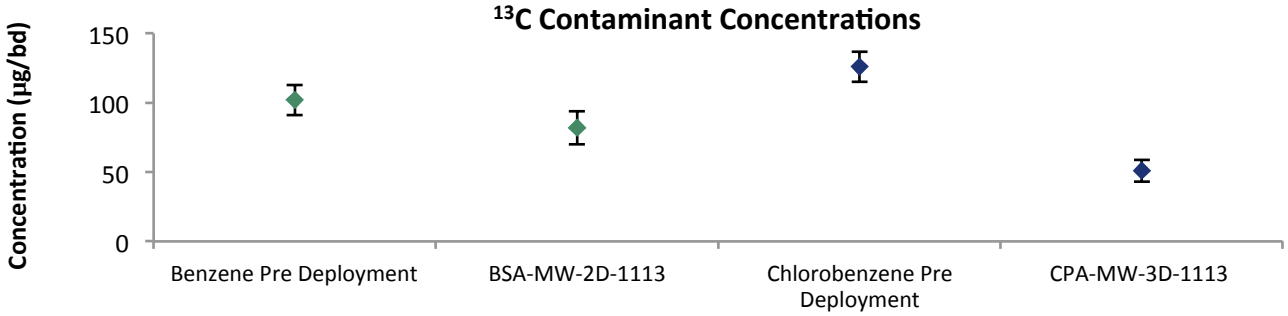

Figure 3. Comparison of Pre-deployment concentrations loaded on Bio-Sep beads to the concentrations detected after incubation.

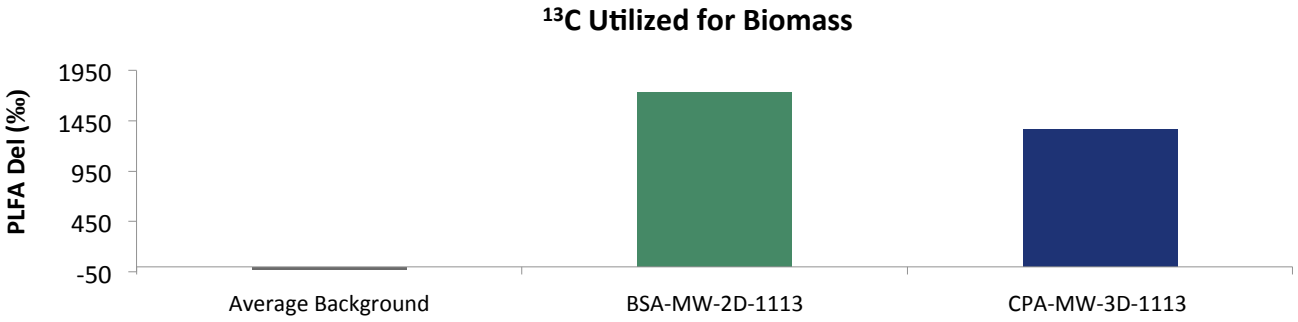

Figure 4. Comparison of the average Del value obtained from PLFA biomarkers from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

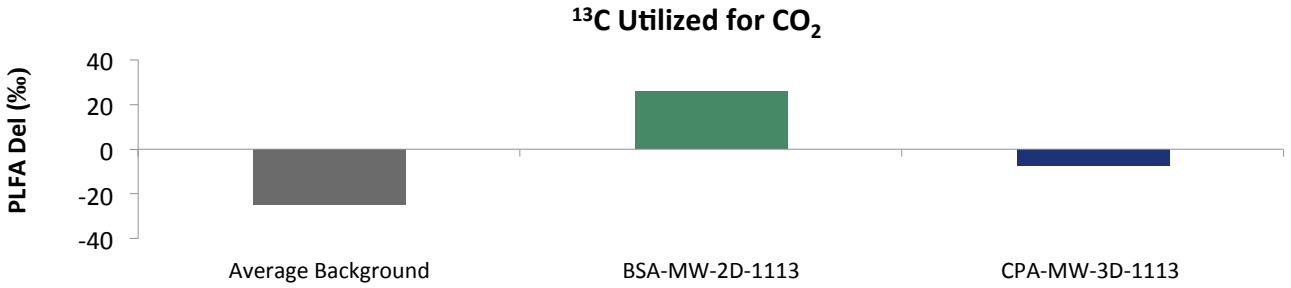

Figure 5. Comparison of the Del value obtained from DIC from each Bio-Trap® unit to the average background Del observed in samples not exposed to ^{13}C enriched compounds.

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Table 2. Summary of the PLFA results for the benzene wells obtained from the Bio-Trap® Units.

Sample Name	BSA-MW-1S-1113	BSA-MW-2D-1113	BSA-MW-3D-1113	BSA-MW-4D-1113	BSA-MW-5D-1113
Biomass Concentration					
Total Biomass (Cells/bead)	9.71E+04	9.00E+04	<1.65E+04	<1.66E+04	1.10E+05
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	1.3	0			0
Proteobacteria (Monos)	73.6	81.2			84.0
Anaerobic metal reducers (BrMonos)	0	0			0
Actinomycetes (MidBrSats)	0	0			0
General (Nsats)	25.2	18.8			14.8
Eukaryotes (Polyenoics)	0	0			1.3
Physiological Status (Proteobacteria only)					
Slowed Growth	1.34	0.21			0.15
Decreased Permeability	1.94	0.00			0.00

Table 3. Summary of the PLFA results for the chlorobenzene wells obtained from the Bio-Trap® Units.

Sample Name	CPA-MW-1D-1113	CPA-MW-2D-1113	CPA-MW-3D-1113	CPA-MW-4D-1113	CPA-MW-5D-1113
Biomass Concentration					
Total Biomass (Cells/bead)	1.22E+05	5.56E+04	5.60E+04	<1.68E+04	<1.67E+04
Community Structure (% total PLFA)					
Firmicutes (TerBrSats)	1.8	0	0		
Proteobacteria (Monos)	37.5	64.5	70.4		
Anaerobic metal reducers (BrMonos)	0	5.7	0		
Actinomycetes (MidBrSats)	0	0	0		
General (Nsats)	56.7	28.3	29.6		
Eukaryotes (Polyenoics)	4.0	1.5	0		
Physiological Status (Proteobacteria only)					
Slowed Growth	2.21	1.79	0.43		
Decreased Permeability	0.00	0.00	0.00		

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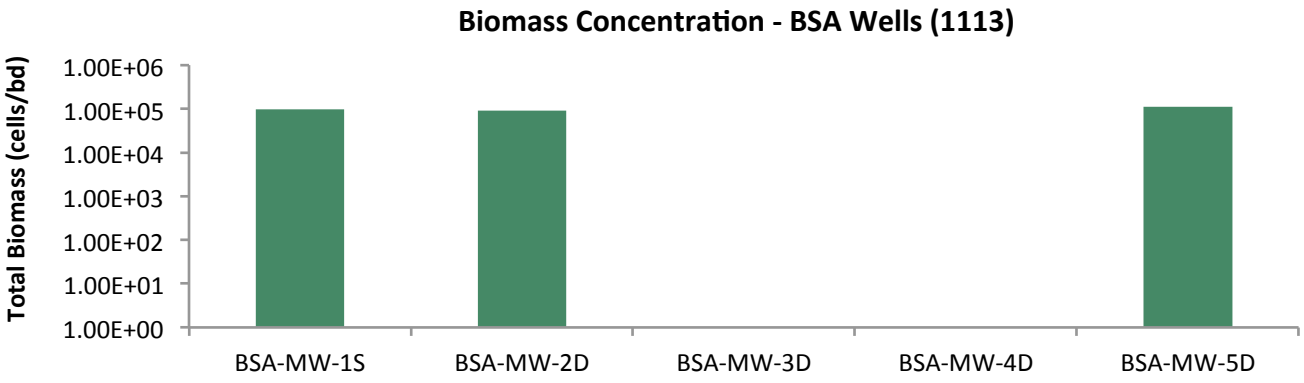

Figure 6. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

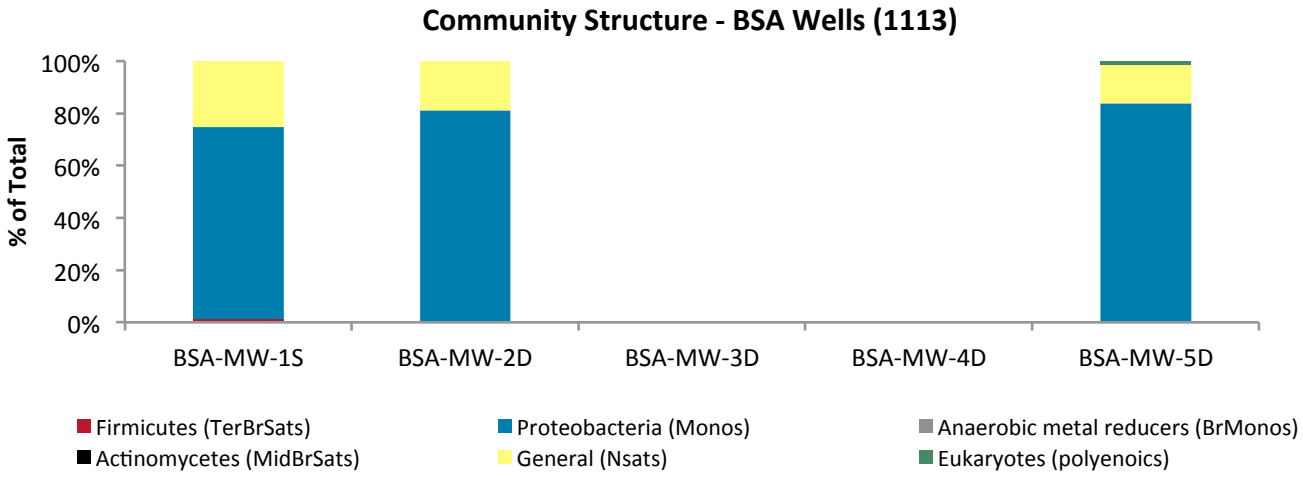

Figure 7. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

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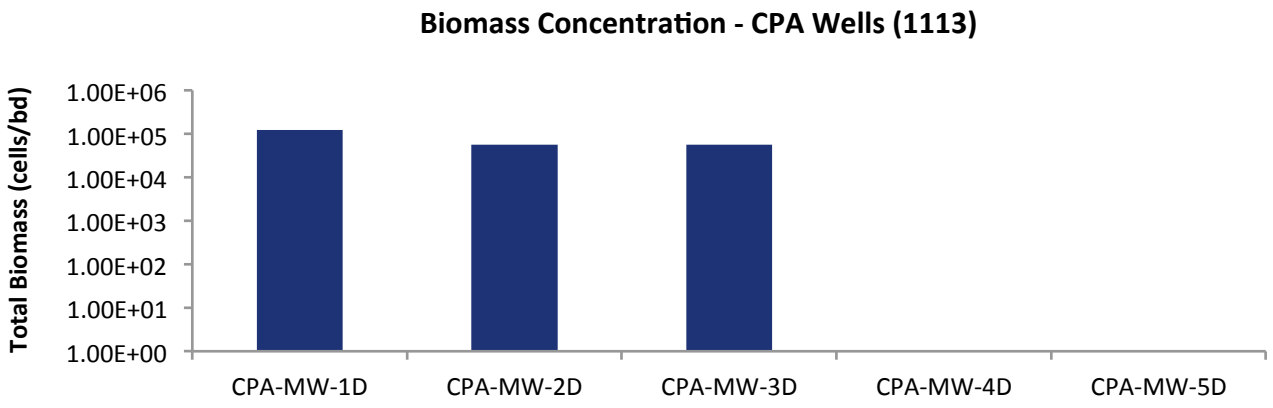

Figure 8. Biomass content is presented as a cell equivalent based on the total amount of phospholipid fatty acids (PLFA) extracted from a given sample. Total biomass is calculated based upon PLFA attributed to bacterial and eukaryotic biomass (associated with higher organisms).

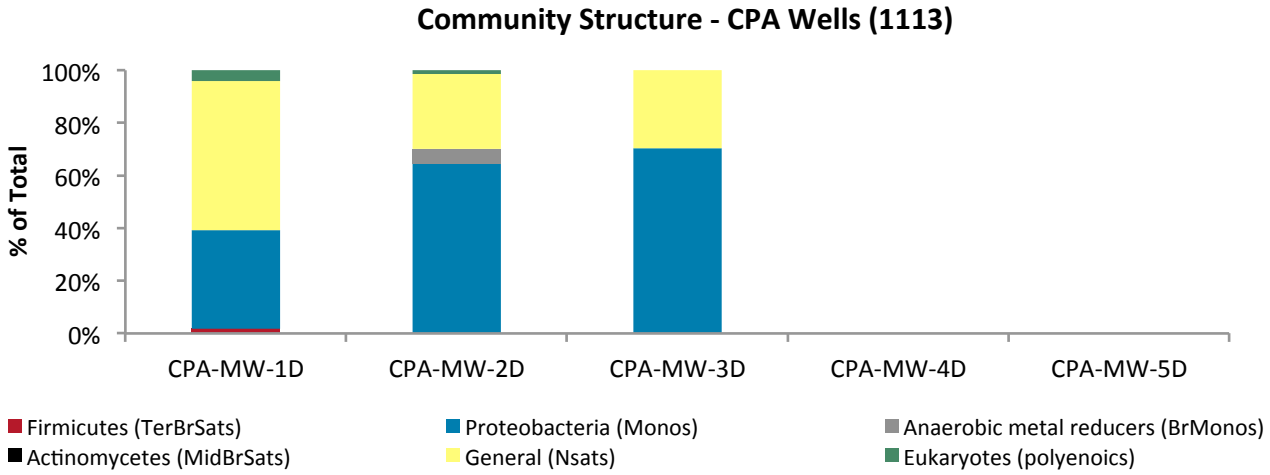

Figure 9. Relative percentages of total PLFA structural groups in the samples analyzed. Structural groups are assigned according to PLFA chemical structure, which is related to fatty acid biosynthesis. See the table in the interpretation section for detailed descriptions of the structural groups.

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Interpretation

Interpretation of the results of the SIP Bio-Trap® study must be performed with due consideration of site conditions, site activities, and the desired treatment mechanism. The following discussion describes interpretation of results in general terms and is meant to serve as a guide.

Contaminant Concentration: Bio-Traps® are baited with a ^{13}C labeled contaminant of concern and a pre-deployment concentration is determined prior to shipping. Following deployment, Bio-Traps® are recovered for analysis including measurement of the concentration of the ^{13}C labeled contaminant remaining. Pre- and post-deployment concentrations are used to calculate percent loss.

Biomass Concentrations: PLFA analysis is one of the most reliable and accurate methods available for the determination of viable (live) biomass. Phospholipids break down rapidly upon cell death, so biomass calculations based on PLFA content do not include "fossil" lipids from dead cells. Total biomass (cells/bead) is calculated from total PLFA using a conversion factor of 20,000 cells/pmole of PLFA. When making comparisons between wells, treatments, or over time, differences of one order of magnitude or more are considered significant.

Total Biomass		
Low	**Moderate**	**High**
10^3 to 10^4 cells	10^5 to 10^6 cells	10^7 to 10^8 cells

For SIP studies, the ^{13}C enriched PLFA is also determined to conclusively demonstrate contaminant biodegradation and quantify incorporation into biomass as a result of the ^{13}C being used for cellular growth. The % ^{13}C incorporation (^{13}C enriched biomass/total biomass) is also provided in the data summary table, but the value must be interpreted carefully especially when comparing wells or treatments. Typically, biodegradation of a contaminant of concern is performed by a small subset of the total microbial community. For Bio-Traps® with large total biomass, the % ^{13}C incorporation value could be low despite significant ^{13}C labeled biomass and loss of the compound. The % ^{13}C incorporation should be viewed in light of total biomass, percent loss, and dissolved inorganic carbon (DIC) results.

^{13}C enrichment data is often reported as a del value. The del value is the difference between the isotopic ratio ($^{13}C/^{12}C$) of the sample (R_x) and a standard (R_{std}) normalized to the isotopic ratio of the standard (R_{std}) and multiplied by 1,000 (units are parts per thousand, denoted ‰).

R_{std} is the naturally occurring isotopic ratio and is approximately 0.011180 (roughly 1% of naturally occurring carbon is ^{13}C). The isotopic ratio, R_x, of PLFA is typically less than the R_{std} under natural conditions, resulting in a del value between -20 and -30‰. For a SIP Bio-Trap® study, biodegradation and incorporation of the ^{13}C labeled compound into PLFA results in a larger $^{13}C/^{12}C$ ratio (R_x) and thus del values greater than under natural conditions. Typical PLFA del values are provided below.

PLFA Del (‰)		
Low	**Moderate**	**High**
0 to 100	100 to 1,000	>1,000

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Dissolved Inorganic Carbon (DIC): Often, bacteria can utilize the ^{13}C labeled compound as both a carbon and energy source. The ^{13}C portion used as a carbon source for growth can be incorporated into PLFA as discussed above, while the ^{13}C used for energy is oxidized to $^{13}CO_2$ (mineralized).

^{13}C enriched CO_2 data is often reported as a del value as described above for PLFA. Under natural conditions, the R_x of CO_2 is approximately the same as R_{std} (0.01118 or about 1.1% ^{13}C). For an SIP Bio-Trap® study, mineralization of the ^{13}C labeled contaminant of concern would lead to a greater value of R_x (increased $^{13}CO_2$ production) and thus a positive del value. As with PLFA, del values between 0 and 100‰ are considered low, values between 100 and 1,000‰ are considered moderate, and values greater than 1,000‰ are considered high. Thus DIC $\%^{13}C$ are considered low if the value is less than 1.23%, moderate if between 1.23 and 2.24%, and high if greater than 2.24%.

Dissolved Inorganic Carbon (DIC) Del and $\%^{13}C$		
Low	**Moderate**	**High**
0 to 100	100 to 1,000	>1,000
1.11 to 1.23%	1.23 to 2.24%	>2.24%

Community Structure (% total PLFA): Community structure data is presented as a percentage of PLFA structural groups normalized to the total PLFA biomass. The relative proportions of the PLFA structural groups provide a "fingerprint" of the types of microbial groups (e.g. anaerobes, sulfate reducers, etc.) present and therefore offer insight into the dominant metabolic processes occurring at the sample location. Thorough interpretation of the PLFA structural groups depends in part on an understanding of site conditions and the desired microbial biodegradation pathways. For example, an increase in mid chain branched saturated PLFA (MidBrSats), indicative of sulfate reducing bacteria (SRB) and *Actinomycetes*, may be desirable at a site where anaerobic BTEX biodegradation is the treatment mechanism, but would not be desirable for a corrective action promoting aerobic BTEX or MTBE biodegradation. The following table provides a brief summary of each PLFA structural group and its potential relevance to bioremediation.

Table 2. Description of PLFA structural groups.

PLFA Structural Group	General classification	Potential Relevance to Bioremediation Studies
Monoenoic (Monos)	Abundant in Proteobacteria (Gram negative bacteria), typically fast growing, utilize many carbon sources, and adapt quickly to a variety of environments.	Proteobacteria is one of the largest groups of bacteria and represents a wide variety of both aerobes and anaerobes. The majority of Hydrocarbon utilizing bacteria fall within the Proteobacteria
Terminally Branched Saturated (TerBrSats)	Characteristic of Firmicutes (Low G+C Gram-positive bacteria), and also found in Bacteriodes, and some Gram-negative bacteria (especially anaerobes).	Firmicutes are indicative of presence of anaerobic fermenting bacteria (mainly *Clostridia/Bacteriodes*-like), which produce the H_2 necessary for reductive dechlorination
Branched Monoenoic (BrMonos)	Found in the cell membranes of micro-aerophiles and anaerobes, such as sulfate- or iron-reducing bacteria	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Mid-Chain Branched Saturated (MidBrSats)	Common in sulfate reducing bacteria and also Actinobacteria (High G+C Gram-positive bacteria).	In contaminated environments high proportions are often associated with anaerobic sulfate and iron reducing bacteria
Normal Saturated (Nsats)	Found in all organisms.	High proportions often indicate less diverse populations.
Polyenoic	Found in higher plants, and animals.	Eukaryotic scavengers will often prey on contaminant utilizing bacteria.

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Physiological Status (*Proteobacteria*): Some *Proteobacteria* modify specific PLFA as a strategy to adapt to stressful environmental conditions (3, 4). For example, *cis* monounsaturated fatty acids may be modified to cyclopropyl fatty acids during periods of slowed growth or modified to *trans* monounsaturated fatty acids to decrease membrane permeability in response to environmental stress. The ratio of product to substrate fatty acid thus provides an index of their health and metabolic activity. In general, status ratios greater than 0.25 indicate a response to unfavorable environmental conditions.

Glossary

Del: A Del value is the difference between the isotopic ratio ($^{13}C/^{12}C$) of the sample (R_x) and a standard (R_{std}) normalized to the isotopic ratio of the standard (R_{std}) and multiplied by 1,000 (units are parts per thousand denoted ‰).

$$Del = (R_x - R_{std})/R_{std} \times 1000$$

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2. White, D.C. and D.B. Ringelberg. 1995. Utility of signature lipid biomarker analysis in determining in situ viable biomass. In P.S. Amy and D.L. Halderman (eds.) The microbiology of the terrestrial surface. CRC Press, Boca Raton.
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4. Tsitko, I.V., G. M. Zaitsev, A. G. Lobanok, and M.S. Salkinoja-Salonen. 1999. Effect of aromatic compounds on cellular fatty acid composition of *Rhodococcus opacus*. Applied and Environmental Microbiology. 65:853-855.

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Company: URS Corporation

Address: 1001 Highlands Plaza Dr. W. Ste 300

St. Louis, MO 63110

email: nathan.mcnurlen@urs.com

Phone: (314) 429-0100

Fax: (314) 429-0462

Project Manager: Bob Billman

Project Name: Solutia WGK 4Q13 GW

Project No.:

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☐ More samples to follow

☒ No Additional Samples

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Please see sampling protocol for instructions

Report Type: ☒ Standard (default) ☐ Comprehensive (15% surcharge) ☐ Historical (30% surcharge)

Please contact us prior to submitting samples regarding questions about the analyses you are requesting at (865) 573-8188 (8:00 am to 4:00 pm M-F). After these hours please call (865) 300-8053.

Sample Information					SIP Analysis				Other:	Other:	Other:
MI ID (Laboratory Use Only)	Sample Name	Date Sampled	Time Sampled	Matrix	PLFA	SIP-Benzene	SIP-Chlorobenzene				
096KJ 1	BSA-MW-1S-1113	10/30/13	1445	water	X						
2	BSA-MW-2D-1113	10/30/13	1255			X					
3	BSA-MW-3D-1113	10/30/13	0900		X						
4	BSA-MW-4D-1113	10/30/13	1620		X						
5	BSA-MW-5D-1113	10/30/13	1135		X						
6	CPA-MW-1D-1113	10/30/13	1505		X						
7	CPA-MW-2D-1113	10/30/13	1430		X						
8	CPA-MW-3D-1113	10/30/13	1325				X				
9	CPA-MW-4D-1113	10/30/13	1120		X						
10	CPA-MW-5D-1113	10/30/13	1030	↓	X						

Relinquished by: [signature] 10/30/13 Received by: Date

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